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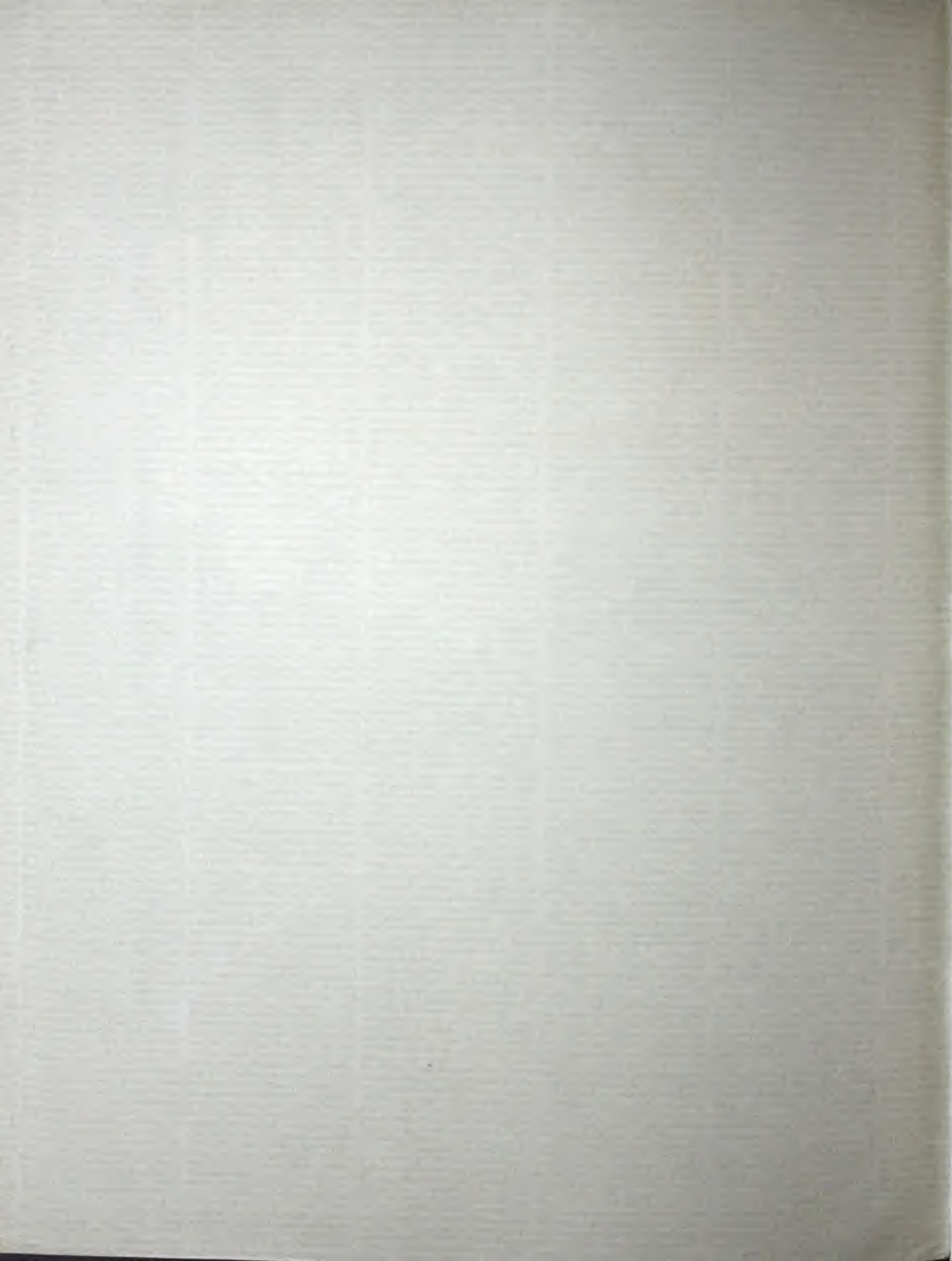


*History*



THE POWERS REGULATOR COMPANY







# SHOP *and* OFFICE TEMPERATURES

THE POWERS REGULATOR CO.

Established

1891

Engineers and Manufacturers  
of Automatic Temperature and Humidity Controlling Apparatus

General Eastern Office  
126 E. 44th St., New York City

General Offices and Factory  
2720 Greenview Ave., Chicago, Ill.

Canadian Powers Regulator Co., Ltd.  
106 Lombard St., Toronto, Ont.

## BRANCH OFFICES

Atlanta  
Baltimore  
Boston  
Buffalo  
Butte, Mont.

Charlotte, N. C.  
Chattanooga  
Chicago  
Cincinnati  
Cleveland

Dallas  
Denver  
Des Moines  
Detroit  
El Paso

Houston  
Indianapolis  
Kansas City  
Los Angeles  
Milwaukee

Minneapolis  
Nashville  
New Orleans  
New York  
Philadelphia

Pittsburgh  
Rochester  
St. Louis  
San Francisco  
Seattle


## CANADIAN OFFICES

Calgary  
Halifax  
Montreal  
Toronto  
Vancouver  
Winnipeg




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# What you will find in this book



## Correct Temperatures for Shop and Office

Facts and evidence from impartial and  
recognized authorities to support the  
following claims:

Most workrooms are overheated.

By eliminating *overheating* and keeping shops and  
offices at healthful temperatures with Powers Auto-  
matic Control, increased profits are to be gained from  
five sources.

They are:

- |   |  |
|---|--|
| 1—A 15 to 48 per cent Saving of<br>Steam ( <i>Fuel</i> ) used for Heating.  | 3—Decrease in Number of Work-<br>ers Inefficient and Absent from<br>Work due to Colds and other<br>Respiratory Diseases. |
| 2—Increased Output of Workers<br>and Better Quality of Work.<br>Tests show 15 per cent more<br>work is done at 68° F. than at<br>75° F. | 4—Smaller Labor Turnover due<br>to Greater Comfort and Better<br>Health of Workers.                                      |
| 5—Fewer Accidents. Tests show<br>23 per cent fewer accidents<br>occur at 67° F. than at 77° F.  |  |





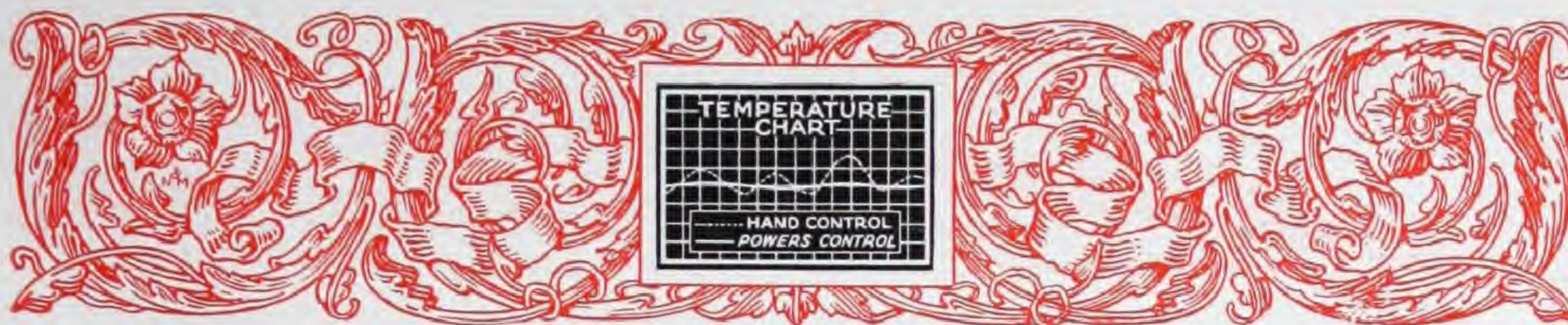


## *Temperature controlled by hand*

—at the whim or fancy of some strong-willed fresh-air fan or the whining insistence of some thin-blooded individual afraid of a "draft"—results in: Heat wasted through open windows and work frequently interrupted to open or close them. Heated words between advocates of different "schools" of heating and ventilating. Inefficiency and absence from work due to colds. Workers too cold, with fingers numb and clumsy. Workers too warm, lagging in their work and careless. Most of these troubles disappear with *Automatic Temperature Control*.







## *What Are Ideal Air Conditions for Shop and Office?*

**H**EATING and ventilating engineers and physiologists are agreed that the following air conditions are most conducive to the health and efficiency of employees in shops and offices:

*Temperature* in offices should be kept at 68° to 70° F.; in shops it should be maintained between 65° and 68°; and where work performed involves much physical exertion the temperature should be even lower.

*Humidity* should be around 50 per cent.

*Air movement* should be just short of being called a draft and should be free from dust, smoke, odors, etc.

### *Danger of "Crowd Poison" a Myth*

"In the ordinary occupied room," says Mr. C. E. A. Winslow, Chairman of the New York State Commission on Ventilation,\* "however badly ventilated, there is always an ample supply of oxygen to meet any physiological need. Carbon dioxide is present in excess in a crowded, badly ventilated room, but the excess is never sufficient to exert any harmful influence upon health or comfort. As to the supposedly harmful organic substances, the 'crowd poison' once believed to be given off in the breath, they simply do not exist.

"Careful and exhaustive studies in England, Germany and the United States, particularly those made by the New York State Commission on Ventilation, have demonstrated beyond any question that the discomfort experienced in a badly ventilated room is due, not to any of these subtle chemical influences, but to the simple fact that the air of such a room is almost certain to be overheated."

### *Proper Temperature and Humidity*

These are the two chief elements of an ideal air condition for the shop and office. That the humidity of the atmosphere is a factor in comfort all admit, for if it is high it makes us feel colder on a cold day and hotter on a hot day. Thus one is more comfortable in a room with a temperature of 65° to 70° if the air is reasonably moist than in a room where the air is dry and the temperature several degrees higher.

That temperature has a greater influence on the health and output of workers than humidity is apparent in the following evidence:

In observing the effect of temperature and humidity on the health and efficiency of several thousand factory operatives in Connecticut and Pennsylvania, Professor Ells-

\*The American Society of Heating and Ventilating Engineers appointed a "Committee to Consider the Report of the New York State Commission on Ventilation." This committee, in its report, says in part: "The scope of the experiments and the number of subjects observed make the work of the Commission unique and add greatly to its value." The committee further states: "From the point of view of the engineer, the most important contribution which this report makes to the science of heating and ventilating is contained in the first part of the report." All references made in this book to the findings of the New York State Commission on Ventilation are taken from the first part of its report.





## SHOP AND OFFICE TEMPERATURES



worth Huntington says, in his remarkable book, "Civilization and Climate":

"Humidity possesses a considerable degree of importance, but the most important element is clearly temperature."

After an exhaustive study of this subject, the New York State Commission on Ventilation expressed the following conclusion:

"The specific harmful influence of unduly low humidity which has been postulated by various writers upon ventilation has not been apparent in our investigations."

Messrs. C. P. Yagloglou and W. E. Miller, in a paper, "Effective Temperature with Clothing," presented at the 1925 annual meeting of the American Society of Heating and Ventilating Engineers, say:

". . . for ordinary temperatures, dry bulb (temperature) becomes a much more important factor in the comfort of a clothed person than wet-bulb temperature (humidity), a fact that justifies to a certain extent the original belief in dry-bulb temperature as being the sensible temperature."

As temperature is the keystone in the arch of air conditions which make for maximum health and output of workers, let us now observe how seldom workrooms are kept at proper temperatures.

### *This Test Shows Most Workrooms Are OVERHEATED*

Most employers have a vague notion that their workrooms are kept at the proper temperature—65° to 68° or lower, depending on the physical activity of the workers. Of a series of observations made in industrial plants in the State of New York, Mr. C. E. A. Winslow, Chairman of the New York State Commission on Ventilation, says:

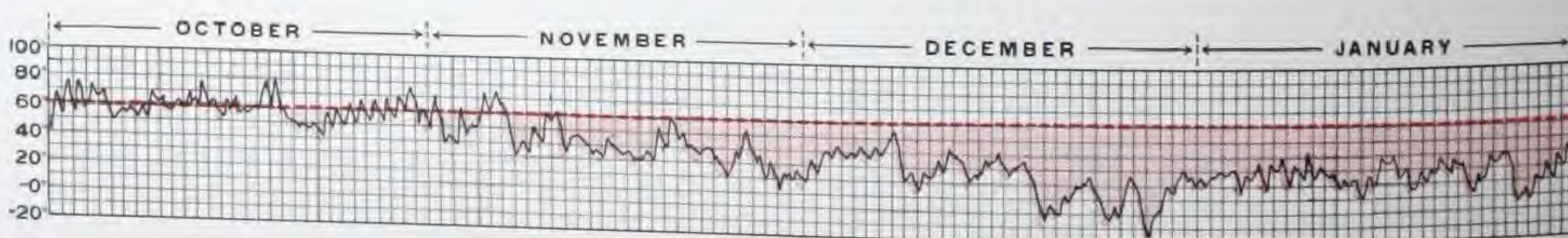
"72 per cent of the workrooms investigated were at a temperature over 72° F., and 29 per cent were at a temperature over 79° F."

### *Why Offices and Factories Are So Often Overheated*

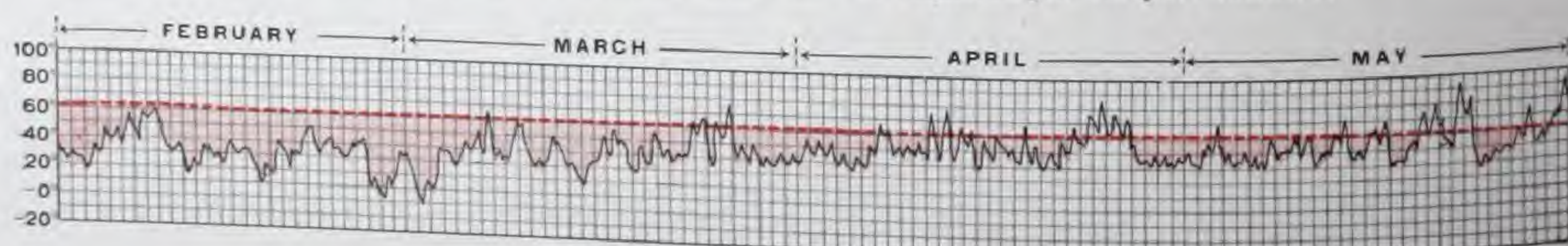
That overheating is as common as it is is not surprising when one considers that a heating system is designed to heat a building comfortably during severely cold weather.

In Chicago, for example, only 5 per cent of each heating season can be classed as severely cold (see charts below), so that during the rest of the season overheating is quite common, especially where there is an abundant supply of exhaust steam available for heating.

Let us now see what large unseen losses are caused by this wasteful practice of overheating.



*These charts show the outdoor temperature in Chicago during the heating season of 1924-25. Red shows when heat is required for comfort indoors.*







## *Effect of Temperature on Output of Workers*

FROM personal experience we all know the strong influence which temperature has on our health and efficiency.

We are conscious of being stimulated or depressed by cool or warm days. We talk as much about the weather as about any other topic of general conversation.

Two powerful plays, "Rain" and "White Cargo," which have had long runs in New York and Chicago, furnish a vivid reminder of the influence which air conditions have on human actions. "Rain" is the story of a missionary's temptation and destruction under the relentless influence of tropical rain and heat. "White Cargo" graphically portrays the inertia, lassitude, loss of will power and ambition, fits of anger, immorality, and the constant feeling of inefficiency and craving for a "bracer" experienced by Northerners under the influence of tropical heat.

Doubtless these plays are overdrawn a bit. Nevertheless, they are based upon experience. Both plays show that what we *do* depends very much upon how we *feel*; and that *how we feel* depends largely on the condition of the



*Correct temperature increases the output of these men and improves the quality of their work.*

air in which we live.

In spite of a general recognition of the strong influence which temperature has on output of workers, it is only within recent years that ACCURATE knowledge has been available on this subject.

### *How Slight Overheating to 75° F. Reduces Output of Workers*

How much more work will workers do at a temperature of 75° F. than at 86° F., and how much more at 68° than at 75°? Several scientific investigations have revealed definite answers to these practical questions.

Let us consider the results of careful and exhaustive tests made by the New York State Commission on Ventilation. In its report this Commission states:

"We have demonstrated a very marked and significant influence of atmospheric temperature upon the performance of physical work. An increase of room temperature from 68° F. to 75° F. caused a decrease of 15 per cent in the physical work performed by men *who were not compelled to maximum effort but were stimulated by a cash bonus.*

"Coolness is more important than air purity, for more work is done in a cool





## SHOP AND OFFICE TEMPERATURES



tagnant room than in a warm room with plenty of air.

"The experiments of the Commission have in general confirmed the conclusion of earlier investigators that the first and foremost condition to be avoided in regulating the atmosphere of occupied rooms is an excessively high temperature. We have found that even slight overheating to 75° F. produces the following harmful results:

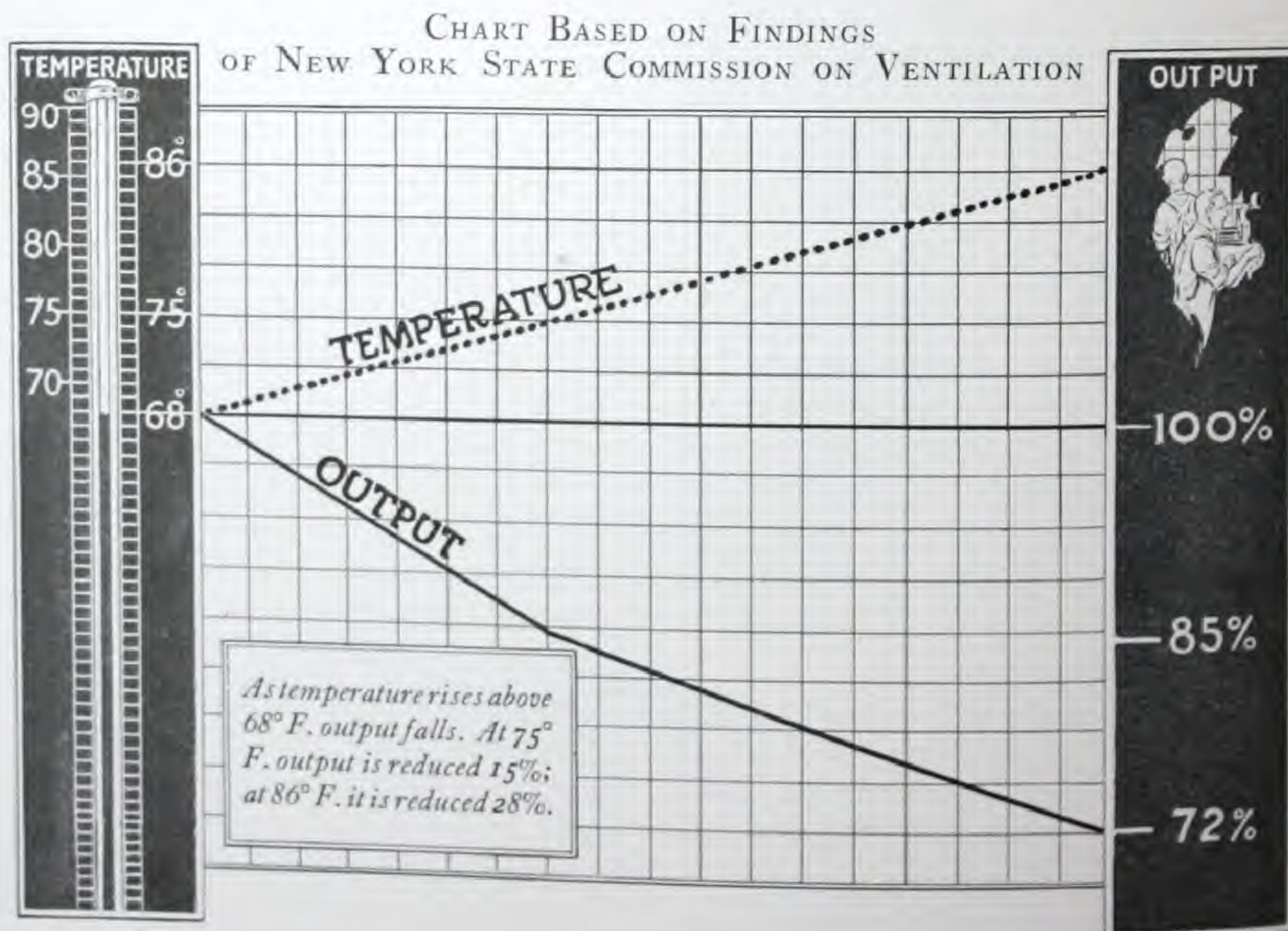
"(1) A burden upon the heat-regulating system of the body leading to an increased body temperature, an increased heart rate and a marked decrease in general vasomotor tone.

"(2) A considerable decrease in rate of respiration.

"(3) A considerable decrease in the amount of physical work performed under conditions of equal incentive—a decrease amounting to 15 per cent at 75° F. and to 28 per cent at 86° F.

"For these reasons we believe the dangers of room overheating are far more serious in their effect upon human health and efficiency than has generally been realized, and that every effort should be made to keep the temperature of the schoolroom, the workroom and the living-room at 68° F. or below."

From the foregoing facts is it not clear that, by preventing even slight overheating in workrooms, Powers Automatic Control will pay good dividends by increasing the output of workers?







## *How Powers Control Reduces Colds, Inefficiency and Absence from Work*

**I**N both offices and factories the common cold is the most frequent form of illness.

Until the facts are reviewed it is difficult to appreciate the immense loss which business and industry suffer on account of reduced efficiency and absence of workers afflicted with colds.

In a group of 6,700 employees, at the Home Office of the Metropolitan Life Insurance Company, 2,824 colds caused a loss to the company of 6,233 days' work during the year ending July 28, 1923.

These employees were salaried office workers. As factory workers are paid by the hour and docked for time off on account of sickness, they are less likely to stay home and nurse a bad cold. They are, nevertheless, just as susceptible to colds as office workers and if the factory worker paid by the hour does report for duty with a bad cold, his employer usually gets *less* work and work of a poorer quality.

If he is a skilled workman and stays home with a bad cold during a busy period, his employer suffers a real loss due to slowed-up production.

### *Overheated Rooms One of the Chief Causes of Colds*

"It is pre-eminently the person who passes from an overheated room into the chill outside air of winter who succumbs to colds and similar infections," says Mr.



"JUST A COLD" but what will it lead to? — The first signs of influenza, pneumonia, and other dangerous diseases are often mistaken for "just a cold."

C. E. A. Winslow, Chairman of the New York State Commission on Ventilation.

In its report this Commission states: "We have found that even slight overheating to 75° F. produces a markedly abnormal reaction of the mucous membranes of the nose, leading ultimately to chronic rhinitis (common cold) and, when followed by chill, producing a moist and distended condition calculated to favor bacterial invasion."

This Commission also found 75 per cent more absence, due to colds and other respiratory diseases, among a large group of school children in *overheated* school-rooms than among a similar group in rooms maintained between 66° and 67° F.

Because of their very commonness colds are looked upon as unavoidable. As long as office and factory temperatures are "regulated" by hand, they will be **OVERHEATED**, and colds will be unavoidable.

Installing Powers Automatic Temperature Control in offices and factories will not end colds among workers. It will, however, greatly reduce their number and result in increased profits due to

1. Fewer workers absent from work with colds which often lead to more serious ills.
2. More and better work from workers while on the job.
3. Smaller labor turnover due to improved health and greater comfort of workers.





## *How Number of Accidents Can Be Reduced with Powers Control*

CONSIDERABLE progress has been made in safeguarding industrial workers against accidents. Yet the number of accidents among industrial workers in the United States each year is more than three times our total list of casualties in the World War.

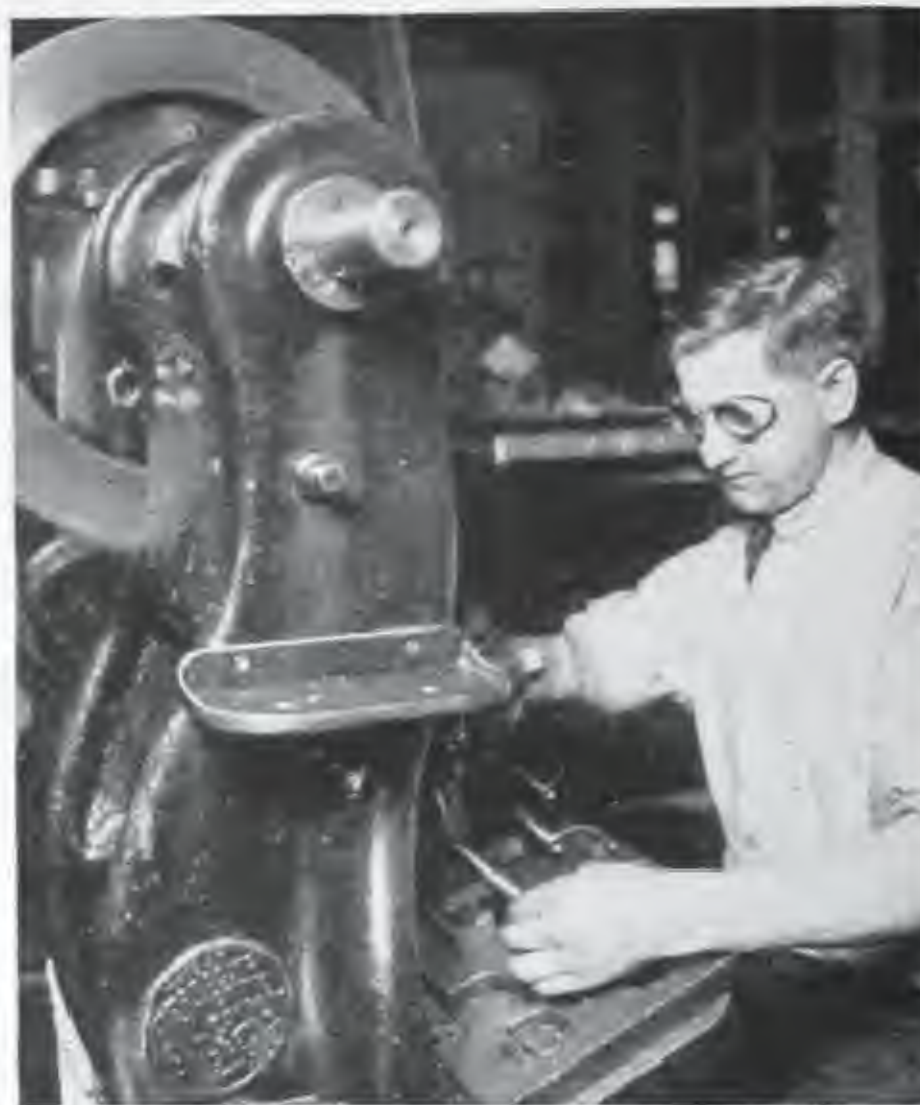
Any means that offers even a small reduction in this great waste is worthy of careful consideration.

Results of investigations made in factories in England have demonstrated that workroom temperatures have a very noticeable effect on the frequency of accidents.

Mr. H. M. Vernon, Investigator for the Industrial Fatigue Research Board of Great Britain, in summarizing the findings of this board concerning the effect of temperature on accidents, says:

"Well over 100,000 industrial accidents are notified to the Chief Inspector of Factories every year, while the number of minor and unreported accidents is probably ten times greater than this; so a reduction of accident frequency even by 5 to 10 per cent would be well worth while.

"Such a reduction can easily be achieved by paying more attention to the temperature conditions under which industrial



*Accidents on Punch Presses, and hundreds of other factory jobs, decrease with correct workroom temperatures obtained with Powers Control.*

work is carried on, as is proved by the following data obtained during the war.

"We installed recording thermometers in two large shell factories, and thereby obtained a continuous record of temperature for nearly a year. We tabulated the frequency with which accidents were treated at the dressing stations and we found it was greatly influenced by the temperature of the shops. It reached a minimum at

67° and at temperatures below and above this point it showed a rapid increase.

"Thus at 57° the accidents were 16 per cent more numerous than at 67°, and at 47°, 32 per cent more numerous. Presumably the hands of the workers tended to get numbed at low temperatures and the loss of dexterity thereby entailed increased the risk of accident.

"At 77° the accidents were 23 per cent more numerous than at 67°; so it seems probable that high temperatures led to carelessness and inattention on the part of the workers, with a consequent increase of accident liability."

The foregoing would seem to prove that by maintaining workshops at proper temperatures Powers Automatic Control will reduce the number of accidents.





## *Fuel Savings of 15 to 56 Per Cent Are Obtained with Automatic Control*

TANGIBLE savings of fuel due to the elimination of overheat by automatic temperature control yield rich returns on the money invested. Many Powers installations have paid back their cost in fuel saving alone in three to five years, and in some installations in one year.

These savings are not restricted to any particular type of building or heating system.

Facts revealed by impartial authorities indicate that waste due to overheated rooms results in an average loss of fuel amounting to 25 per cent. This is shown in the chart below, which appeared in the 1924 Report of the Heat Utilization Committee of the National District Heating Association.

Mr. J. E. Seiter, the author of this chart, states in the report mentioned above:

"One of the greatest sources of waste in the modern heating system is the lack of efficient temperature control. The result of this lack of control is very evident on inspection of the curve in the chart below, which shows the waste by overheating in per cent for each degree the building is heated above 70° F. While the chart seems to indicate that for average winter weather the loss is 3 per cent per degree F. the building is heated above 70° F., by actually integrating the chart for an entire heating season this loss is 5 per cent, due, of course, to high losses in mild weather.

"The writer's experi-

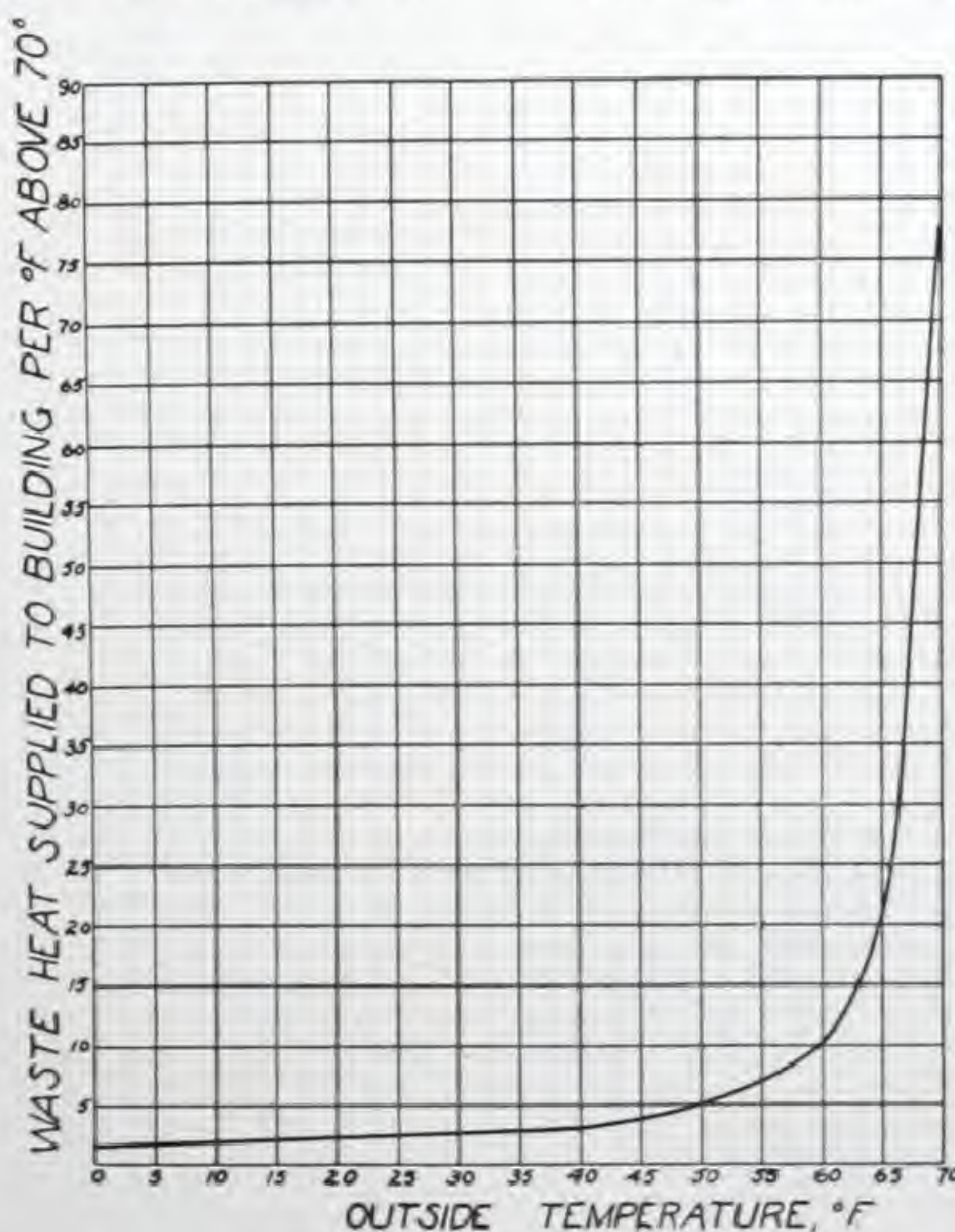
ence is that most buildings are kept at a temperature nearer 75° F. than 70° F. This in most cases is not due to any particular desire of the occupants to have the building at this high and unhealthy temperature, but because of lack of efficient temperature control. This results in a steam consumption 25 per cent in excess of that required."

And this is not all, for the waste due to overheating is increased by occupants of rooms opening the windows owing to stuffy and uncomfortable conditions, so that the total heat loss may far exceed that from overheat alone.

As an example of what this window loss may be, let us consider the findings of an engineer of a large institution in Winnipeg, Manitoba, who suspected that a great deal of heat was being wasted through unnecessary window opening.

He and his assistant kept an accurate record of windows found open in Building No. 1, which was divided into three wings, "A," "B" and "C." In wings "A" and "B" all radiators were under Powers control, while in wing "C" radiators were controlled by hand. During the time of the test, temperature varied from 13° below zero to 14° above, and part of the time there was a cold northeast wind blowing. Counts were made at 1 p.m., 3 p.m., 10 p.m. and midnight.

In wings "A" and "B" there were 108 windows





## SHOP AND OFFICE TEMPERATURES

each. In wing "C" there were 128. In wing "C" (hand control) 72 per cent of the windows were found open. In wings "A" and "B" (Powers control) the percentage of open windows was only 21% and 24% respectively.

Undoubtedly the "open-window" waste of heat is the greatest loss that comes from hand regulation. It accounts for the saving of 25 to 60 per cent frequently reported where Powers Systems are attached to heating plants previously regulated by hand. The chart below shows the "open-window" loss of heat superimposed on the overheat loss.

When thermostats maintain correct temperatures, the impulse to open windows disappears.

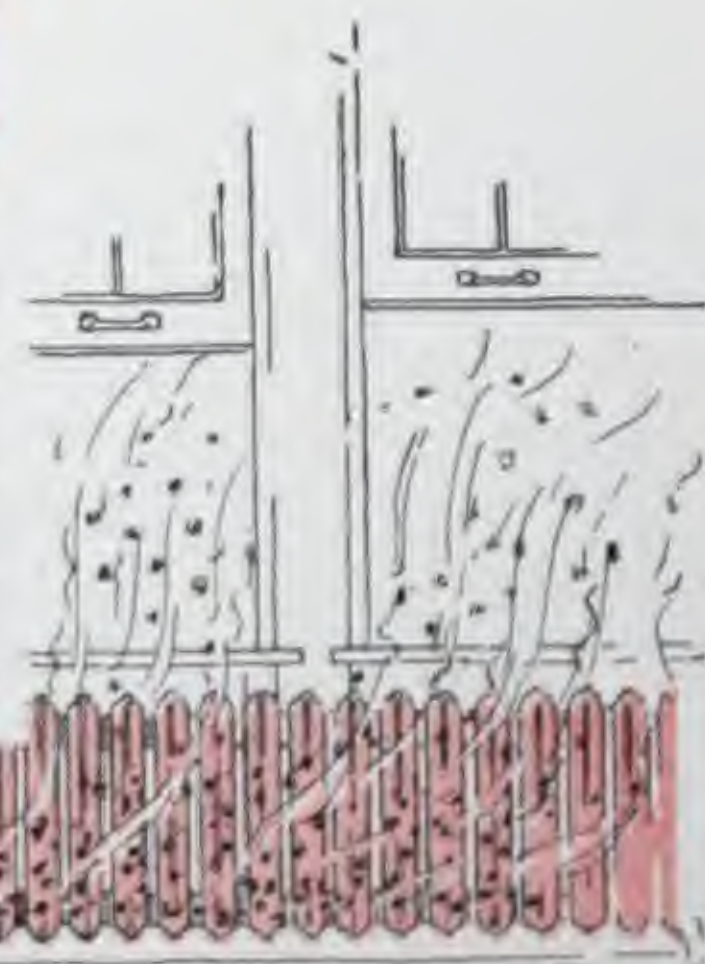
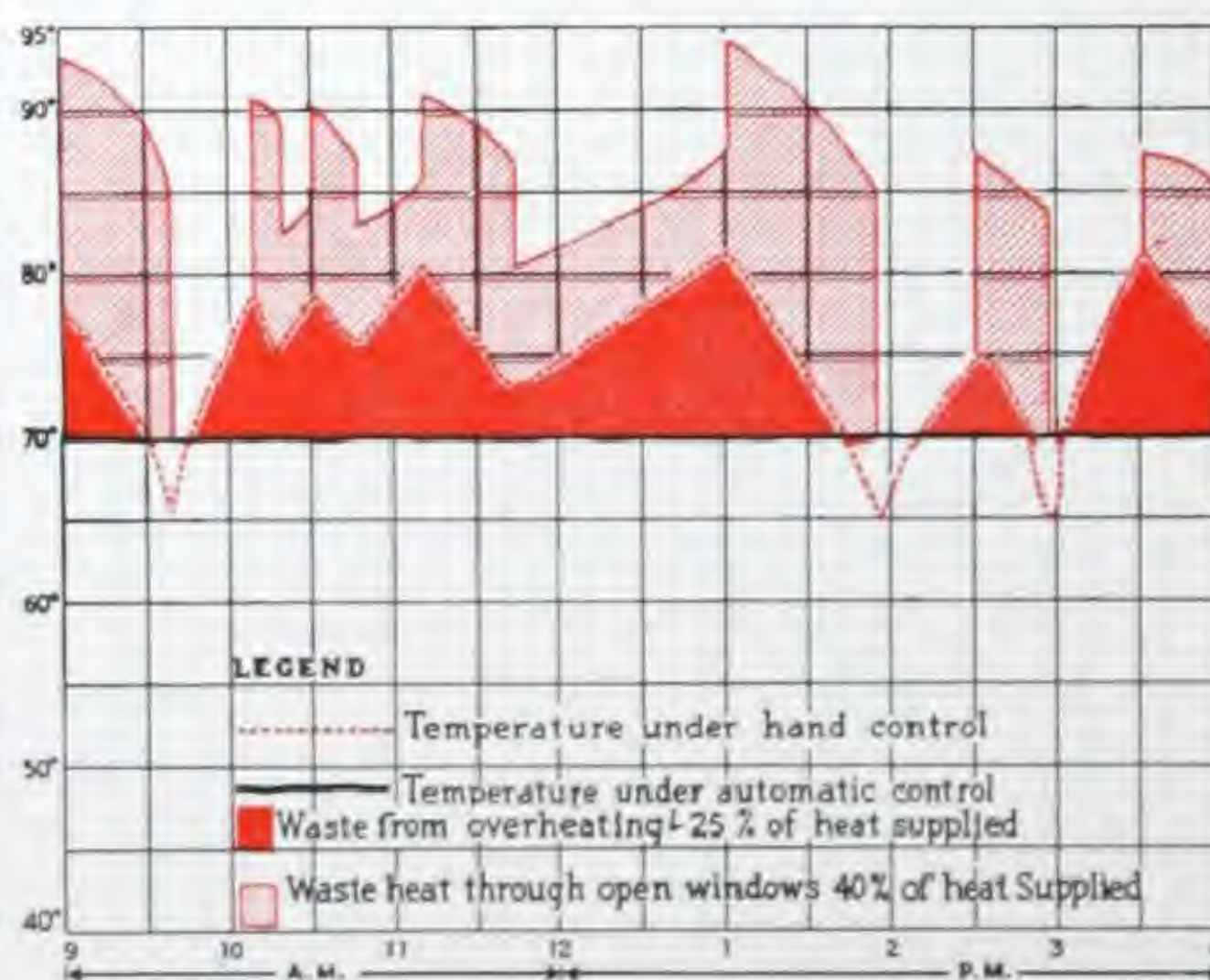
### *Will Powers Control Save Fuel Where Exhaust Steam Is Used for Heating?*

If the amount of exhaust steam is so great or the heating load in a plant so small that no supplemental supply of live steam is neces-

sary under any weather conditions or even during nights and holidays, Automatic Heat Regulation would save no fuel and its value would be limited to the improved sanitary condition and greater efficiency brought about by its use. There are few plants, however, in which the heat and power load will balance as above suggested. Ordinarily, the exhaust steam will take care of the heating requirements during the milder weather but under more severe conditions live steam must be added, and there are few plants indeed where there is any exhaust steam available nights and holidays.

In view of the fact that eight or nine hours on week days constitute the average operating period, it may be safely said that some live steam will be required to keep the plant properly heated during at least 80 per cent of the heating season, and during this period a most remarkable saving in fuel is effected

### **Over heat Waste 1 Shovel of Coal in every 4**



### **Open Window Waste of heat 2 shovels of Coal in 5**



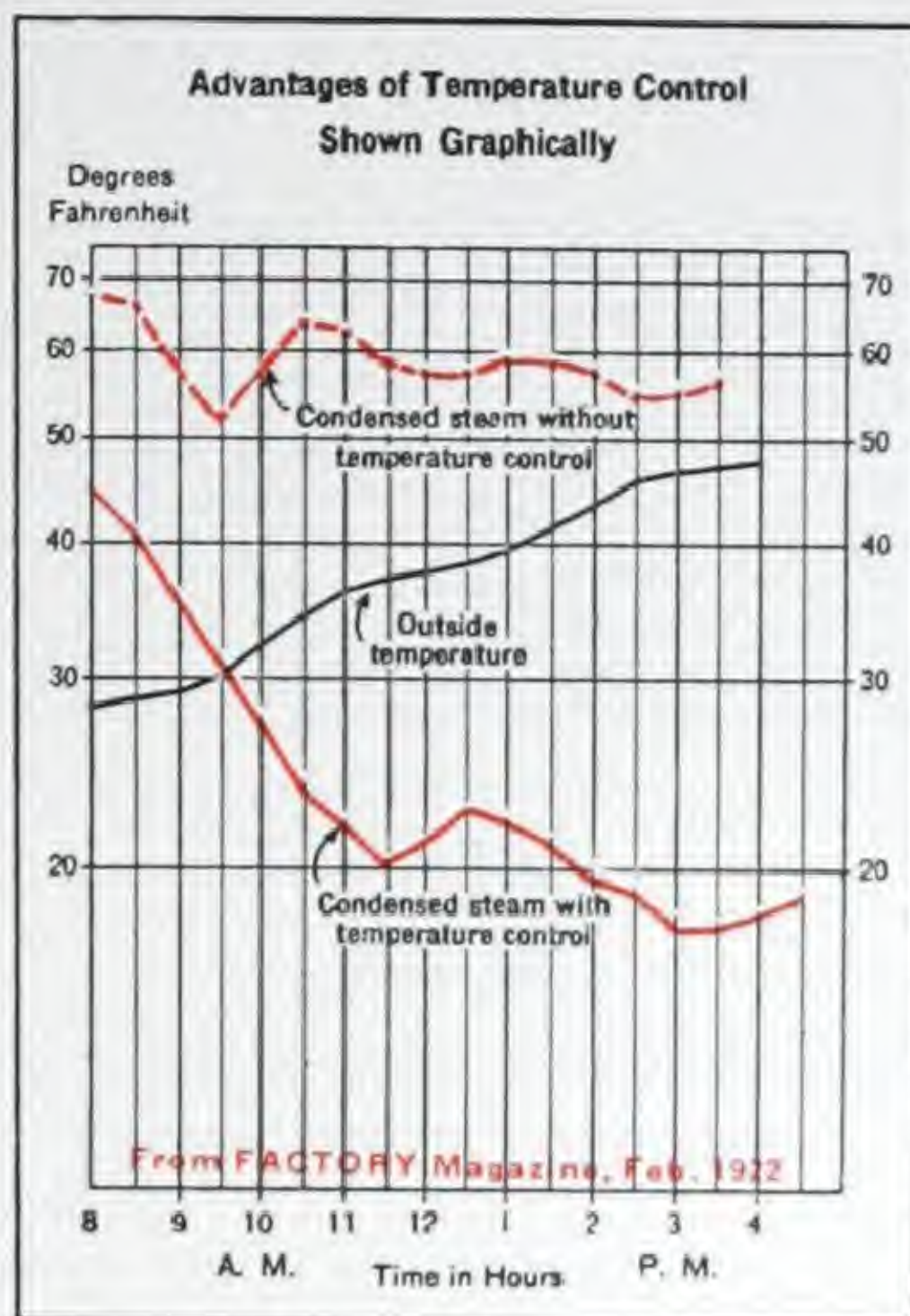


## THE POWERS REGULATOR COMPANY



by the Powers System of Temperature Regulation.

In very few plants is the heating surface so accurately proportioned that all parts of the building will be heated to a uniform degree with a given pressure of steam; and even if such accurate installation of heating surface were possible, the varying conditions in different parts of the plant would disturb the balance, while the additions and alterations which ordinarily occur after some



period of years would thoroughly "scramble" the engineer's original plan. Automatic Temperature Control will iron out these irregularities, prevent overheating in one part of the building at the expense of another, so that the steam that is used will be evenly distributed over the area that is to be heated, with consequent economy. Under such a condition the back pressure on the non-condensing engine can be held at the minimum.

(Text continued on page 22)

### *This Test Shows 56 per cent Saving of Steam*

The chart above is based upon a comparative test of steam consumption in two buildings at the University of Illinois, reported in Vol. I, pages 455-56, of "Mechanical Equipment of Buildings," by Harding and Willard. The buildings are practically the same in size and construction.

In commenting on the results of this test Mr. A. C. Willard, Professor of Heating and

Ventilation and Head of the Department of Mechanical Engineering, says, "The test was made on January 19, 1910, for a period of 8 hours from 8 a.m. to 4 p.m. The sun was shining most of the day and there was a strong north wind. Both buildings were occupied by classes and in the Engineering Building the students often opened the windows to prevent overheating."

*Engineering Hall, University of Illinois, without  
Thermostatic Control*



*Physics Building, University of Illinois, with  
Thermostatic Control*





# SHOP AND OFFICE TEMPERATURES



F. T. JOY, Vice President  
W. E. MALLORY, Treasurer

C. A. MALLORY, President

H. B. MALLORY, Vice President  
T. J. BOWEN, Secretary



## THE MALLORY HAT CO.

FUR FELT & STRAW HATS

NEW YORK SALESROOM 234 FIFTH AVE. COR. W. 27TH ST

MAIN OFFICE AND FACTORY  
DANBURY, CONN.

February 8, 1926.

The Powers Regulator Company,  
2720 Greenview Avenue,  
Chicago, Illinois.

Gentlemen:-

Replying to your letter of February 1st regarding our experience with your automatic temperature control, since our original installation in 1919 we have added several units in different parts of our plant; our main building is completely equipped.

We consider the investment in this apparatus profitable for the following reasons: Fuel saving amounts to over 20 per cent; and Efficiency of workmen has been increased owing to air condition being much better for their health and comfort.

Your apparatus has also been a great help to us in maintaining proper temperature and humidity in our blowing and forming mill.

Although we have tried several other makes of automatic temperature control, we have found none so accurate and dependable as yours.

Very truly yours,  
THE MALLORY HAT COMPANY

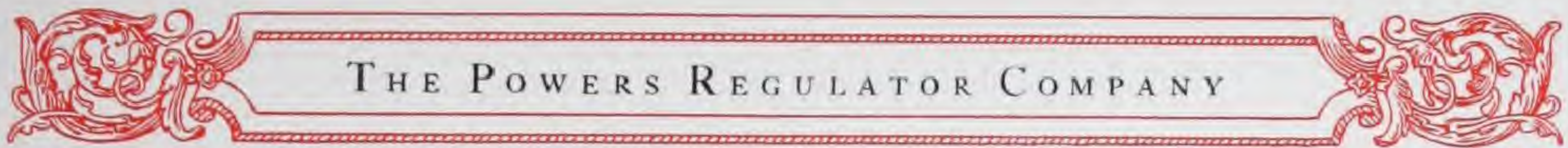
*H. B. Mallory*

HBM:be

ORDERS ACCEPTED SUBJECT TO FIRE, STRIKES, ACCIDENTS OR OTHER CAUSES BEYOND OUR CONTROL DELAYING OR PREVENTING DELIVERIES

*Fuel Saving Here Amounts to Over 20 per cent*





## 30 per cent Saving of Fuel with Powers Control

ALL ORDERS AND CONTRACTS SOLICITED BY ANY REPRESENTATIVE OF THIS FIRM ARE SUBJECT TO APPROVAL BY IT AT HOME OFFICE. ALL ORDERS AND CONTRACTS ACCEPTED SUBJECT TO LABOR DIFFICULTIES, FIRES OR OTHER UNAVOIDABLE DELAY.

ESTABLISHED 1865.

**SCOTT & WILLIAMS,**  
INCORPORATED  
BUILDERS OF  
**KNITTING MACHINERY**

ALL PRICES AND QUOTATIONS  
SUBJECT TO CHANGE  
WITHOUT NOTICE

*Sacoma, N.H.*  
January 21, 1926.

*Cable Address*  
*Scottwill, N.H.*

GENERAL OFFICE  
365 BROADWAY, N.Y.

The Powers Regulator Co.,  
263 Summer St.,  
Boston, Mass.

Gentlemen:

In 1920 we built a new factory at Lakeport, New Hampshire, 60 x 200, five stories high, cement construction, and this factory was equipped with Powers regulation.

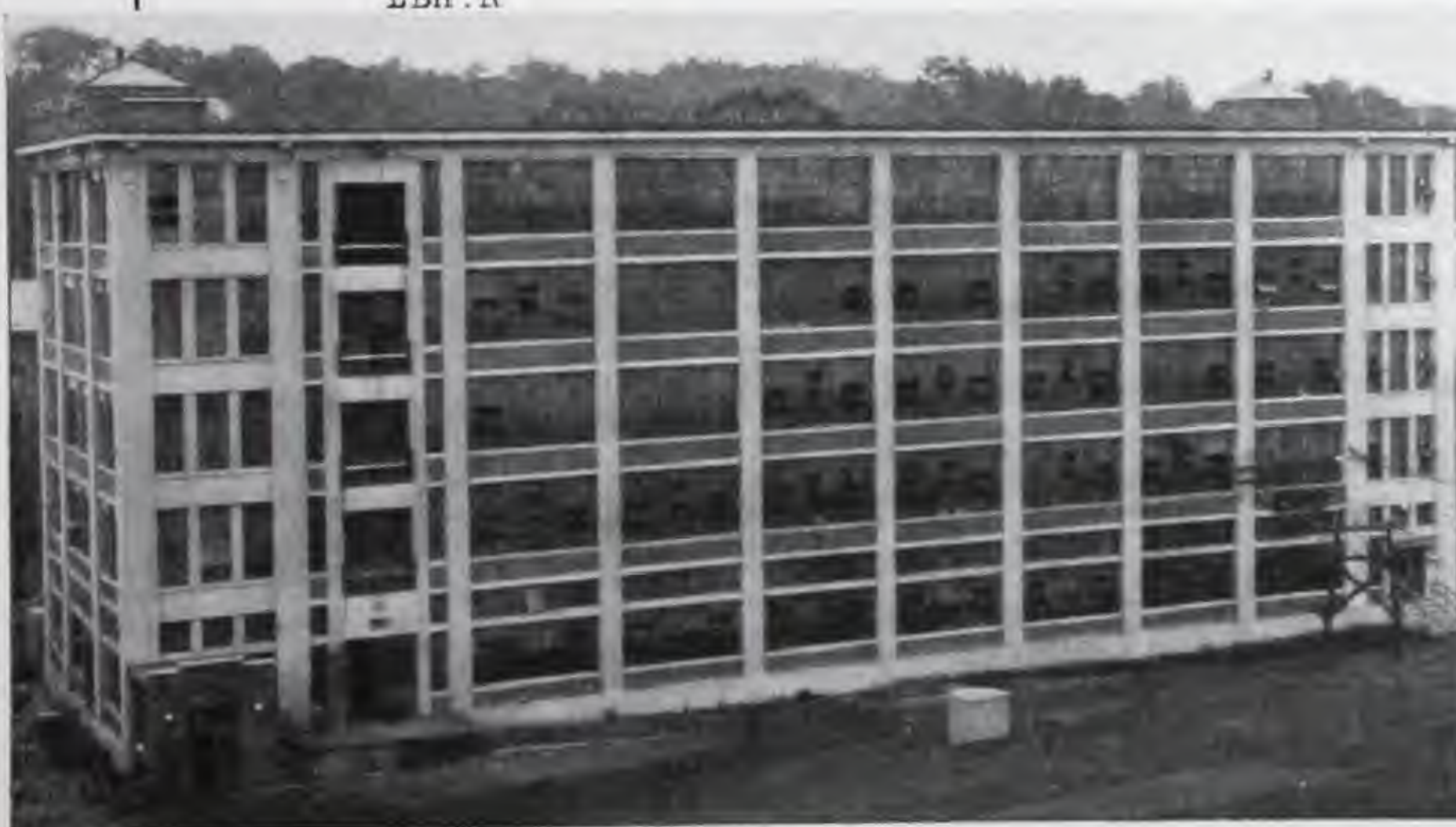
This equipment has operated very satisfactorily indeed and is a profitable investment to us. We estimate that we have effected a fuel saving of approximately 30% by the use of this control, as it keeps the factory at a constant temperature, and we have found the apparatus to be accurate and dependable.

Yours very truly,

SCOTT & WILLIAMS INC.

*J. B. Holt*  
Factory Manager.

Enc.  
LBH:R



*Scott & Williams Co.  
Plant at Lakeport, New  
Hampshire*





## SHOP AND OFFICE TEMPERATURES



RIALTO

CHAMBERS WALDHEIM

RELIANCE

WALTER E. GILLHAM  
CONSULTING ENGINEER  
FOR MUTUAL BUILDING  
KANSAS CITY, MO.

June 22, 1923.

In the preparation of the plans and specifications for the heating of the Land Bank Building, 15 West 10th St., this City, the question regarding temperature regulation was discussed and the Architects, Messrs. Keane & Simpson, requested me to get some data on the subject. Accordingly I investigated the cost of heating in four Kansas City buildings: the Chambers Building, 12th & Walnut, the Reliance Building, 10th & McGee, the Waldheim Building, 11th & Main, and the Rialto Building, 9th & Grand Ave.

The Chambers Building and the Rialto Building are equipped with automatic temperature regulation. All of the buildings, at the time the tests were made, were heated by the Kansas City District Heating Company and the following information was taken from data on file in the offices of this Company:

To heat these buildings, the following number of pounds of steam were required per thousand cu. ft. of space:

Chambers Bldg. with Temp. Regulation	---3840#
Reliance " without " "	---7200
Rialto " with " "	---3500
Waldheim " without " "	---6728

The cost per thousand cu. ft. of contents in the Chambers Building was \$5.95. The cost per thousand cu. ft. of contents in the Reliance Building was \$8.82 or 48% more than the Chambers Building.

Very truly yours,

*Walter E. Gillham*

48  
per cent  
Saving  
of  
Fuel

ob-  
tained  
here  
with  
Powers  
Control





# THE POWERS REGULATOR COMPANY



*Fuel Saving Here Amounts to Over 15 per cent*

CHAS. & McCLELLAN, Vice Pres.  
PAUL H. BEYER, Vice Pres. & Gen. Mgr.  
JAMES A. BARCOCK, Vice Pres.

JOHN W. STEIN, President

EDWARD S. DUNN, Secretary  
JAMES H. HUTTEN, Treasurer  
WILLIAM F. FILLIS, Asst. Sec'y

**YELLOW TRUCK & COACH MANUFACTURING COMPANY**  
**YELLOW CAB MANUFACTURING CO.**

MANUFACTURERS  
YELLOW CABS



MANUFACTURERS  
YELLOW CAB TRUCKS

TELEPHONE SPRINGFIELD 5100

5861 W. DICKENS AVE.  
**CHICAGO**

December 5, 1925.

Cable Address: YELLOWCAB

The Powers Regulator Co.,  
2720 Greenview Avenue,  
Chicago, Illinois.

Attention: Mr. H. W. Pea.

Dear Sir:-

We have found your installation of Powers  
Temperature Regulators to be entirely satisfac-  
tory, being accurate, maintaining a uniform  
temperature and being an economical fuel saver.  
Fuel saving would run upwards of 15%.

Yours very truly,  
YELLOW TRUCK & COACH MFG. CO.  
*Harry H. Harsted*  
Plant Engineer.

W H W.

ADDRESS ALL COMMUNICATIONS TO COMPANY AND NOT TO INDIVIDUALS







## SHOP AND OFFICE TEMPERATURES



### The Mason Tire & Rubber Co.

Kent, Ohio

TEXTILE DIVISION

Jan. 16, 1926

Powers Regulator Co.,  
2720 Greenview Ave.,  
Chicago, Ill.

Gentlemen:

Your letter of Dec. 8 with reference to the service which your automatic temperature control system has given us has been passed to the writer for attention.

The Powers automatic temperature control system was installed in our factory in November, 1920 at the time the plant was erected and for the past six years has given us very accurate and dependable service at a small maintenance cost.

In our line of work, the manufacture of tire fabrics, it is absolutely necessary that the humidity be kept at an even and constant degree, which would have been impossible without an accurate control system. The system also keeps the temperature of the factory at a healthful degree which increases the efficiency of our employees, assuring us that they are making a quality product at all times.

We haven't made an actual test of the saving in fuel by the automatic control system but believe it would be approximately 25%.

Yours truly,

MASON TIRE & RUBBER CO.,  
TEXTILE DIVISION

*R. E. Macomber*

Superintendent.

RM:G

*Here Fuel Saving is Approximately 25 per cent*





THE POWERS REGULATOR COMPANY



*Fuel Saving Here Amounts to Over 25 per cent*

THE BRANCH RIVER WOOL COMBING CO., INC.  
WOONSOCKET, R. I.

LETTERS  
P. O. BOX 283

CABLES  
BRANCHCOB

February 11, 1926

The Powers Regulator Company  
263 Summer Street  
Boston, Mass.

Dear Sirs:

Referring to the Powers Control which we have had in operation, we are pleased to give you the following particulars:

- 1 -- The investment made by us in Automatic Temperature Control has been quite profitable.
- 2 -- We consider that we have saved over 25% of fuel through having a Powers Control.
- 3 -- The efficiency of the workers has certainly been increased by the healthful and regular temperature obtained by the Powers Control.
- 4 -- We are pleased to state that we consider your apparatus 100% accurate and dependable.

We are, dear Sirs,

Yours sincerely,

BRANCH RIVER WOOL COMBING COMPANY, INC.

*W. H. Quinn*  
TREASURER.

WGH:FBG





## SHOP AND OFFICE TEMPERATURES



Plant at Plainfield, N. J., where gasoline motors used in all MACK trucks are manufactured. This is only one of the International Motor Company's plants.



**INTERNATIONAL MOTOR COMPANY**

PLAINFIELD, N. J.



February 5th, 1926.

The Powers Regulator Co.,  
#2720 Greenview Avenue,  
Chicago, Ill.

Gentlemen:-

In answer to your letter of January 26th, would say that we have been using the Powers Control since 1918. The system was installed at that time in a four-story concrete building used as a general Machine Shop and for Office purposes.

We consider the investment made in this apparatus installed in 1918 was profitable and therefore decided in 1924, to install similar apparatus in additional extensions of four-story concrete construction made at that time, to be used for general manufacturing purposes.

We cannot say just what percentage of fuel is saved by means of this control, but are inclined to believe that in mild weather there is a saving of at least 20% in steam required to heat a given area, due to the fact that there is a tendency to open windows instead of shut off steam when a hand control of heating service is used.

We also believe that a more even temperature is of benefit in obtaining increased efficiency from our workmen. When using your system, we have increased the heating surfaces so that it is always warm in the coldest weather and at the same time, are not afraid of losing money because of excessive heat in mild weather.

We have found your apparatus accurate and dependable and have had nothing more than ordinary and normal maintenance expense in connection with the operation of the system.

The writer hesitated a great deal at the time of the original installation in 1918, in deciding that the expense of this installation was justified in a factory building. He is convinced that the decision made at that time was a wise one and is inclined to continue in this view when at any time in the future, any additional construction may be contemplated.

Yours very truly,

*W. J. L. L.*  
Factory Manager.

LSA/fer





## *Fuel Savings Alone Paid for this Installation in One Year*

Offices  
NEW YORK  
BOSTON



COURIER-CITIZEN COMPANY  
*Printers*

LOWELL, MASSACHUSETTS

March 25, 1924

Diamond Chain & Mfg. Company  
Indianapolis, Indiana

Att. Mr. C.R. Ramage, Pur. Agent

Dear Sir:-

Replying to your letter of March 17th for information in regard to the Powers Regulator System of Automatic Heat Control which was installed in our plant some months ago, we would say that our building is approximately the same size as yours, being 60 feet x 360 feet, of mill construction. We do not operate a heating plant but buy steam from a central power station.

Previous to the installation of the heat control system we found that our building was overheated, and also that such a heating arrangement was very expensive. In our particular case our saving has this winter alone been more than the cost of the installation of the heating control system. Our bills have not exceeded but a little over 25% of last year's billing.

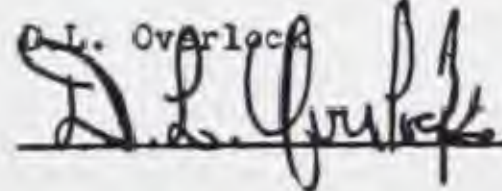
Besides saving fuel, this control furnished much better working conditions for employees. Our production records have increased in the past year.

There has been no expense for upkeep.

In closing, I can recommend this system very strongly as I believe that you will find it would make a saving of at least 20% and possibly much more on your heating bills, besides having much better working conditions for your employees. If there are any other items which we have not covered we should be very glad to reply further.

Yours very truly,

Courier-Citizen Company

C. L. Overlock  


DLO/RC

Before the Diamond Chain & Mfg. Co. installed a Powers System of Control, they wrote to a number of firms using our apparatus. This letter is one of the replies received. Permission was granted by Mr. Overlock to show the letter in this book.



## Application of Powers Temperature Control What It Is, and How It Works

THE brakes on the 20th Century Limited may be likened to automatic temperature control on a heating system.

Both are operated by compressed air. The Century's brakes retard and stop its speed when it reaches its destination. Automatic temperature control "brakes" and stops the heat supply when room temperature reaches the point desired.

To operate the Powers System of Temperature Control, a compressed air supply, constantly at a pressure of 15 pounds per square inch, is required.

Small pipes deliver this compressed air to thermostats located in the various spaces to be controlled.

The Thermostat—a thermally sensitive device—controls the delivery of this compressed air through pipe lines to diaphragm motor valves regulating the heat supply to radiators, heating coils or dampers.

While all of the above named elements in the Powers System are of course inter-dependent and important, the thermostat is to be particularly considered, because upon its accuracy, constancy and efficiency depends the value of the entire system.

### *The Powers Thermostat Why It is Unlike Any Other*

The Powers Thermostat attains its remarkable efficiency and differs from all others in the employment of a principle

that is extremely simple but tremendously effective. Its thermostatic element is the *vapor disc*. This is a hollow metal disc with flexible walls of phosphor bronze within which is hermetically sealed a small quantity of volatile liquid having a boiling point somewhat lower than the desired operating temperature. The liquid in this disc is boiled by

the temperature of the room, thus creating an internal vapor pressure so that the walls expand and contract precisely in accordance with variations in the temperature to which it is exposed.

The pressure developed by the volatilization of a confined liquid is a constant, therefore the Powers Thermostat never gets out of adjustment. Instances are recorded where thermostats, after being temporarily held out of service for years, upon resuming

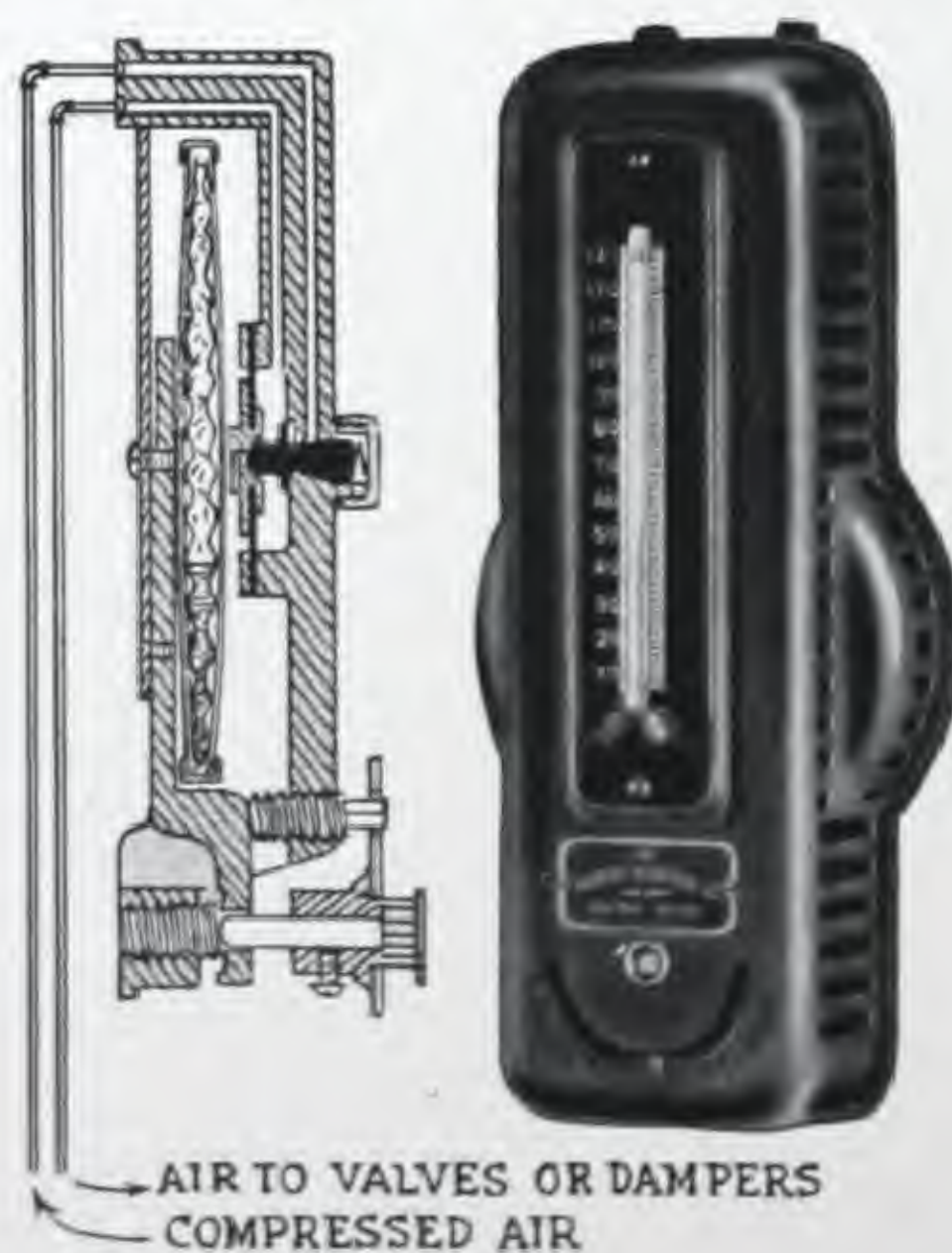
service, functioned with perfect accuracy. This characteristic of the Powers Thermostat is very important because it insures its constancy of operation. It takes hold in the fall where it leaves off in the spring, its adjustment being in no wise disturbed by extremes of summer temperature or the occasional chill of unheated rooms in winter.

This vapor disc operates a double valve controlling both supply and exhaust of the compressed air, thus acting as a pressure regulating valve and giving at all



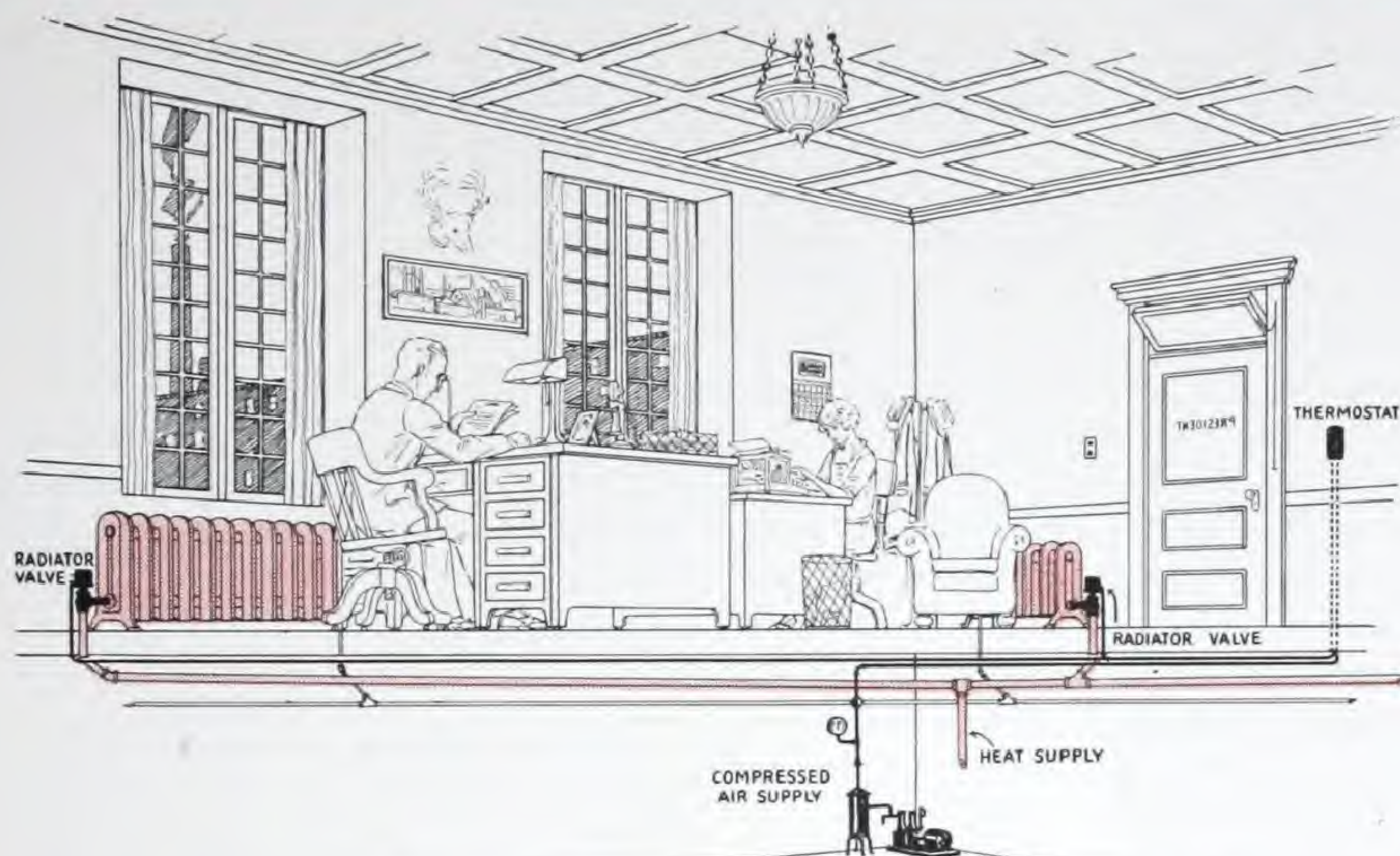
POWERS  
TYPE "D"  
THERMOSTAT

### POWERS "K" THERMOSTAT AND CROSS-SECTION



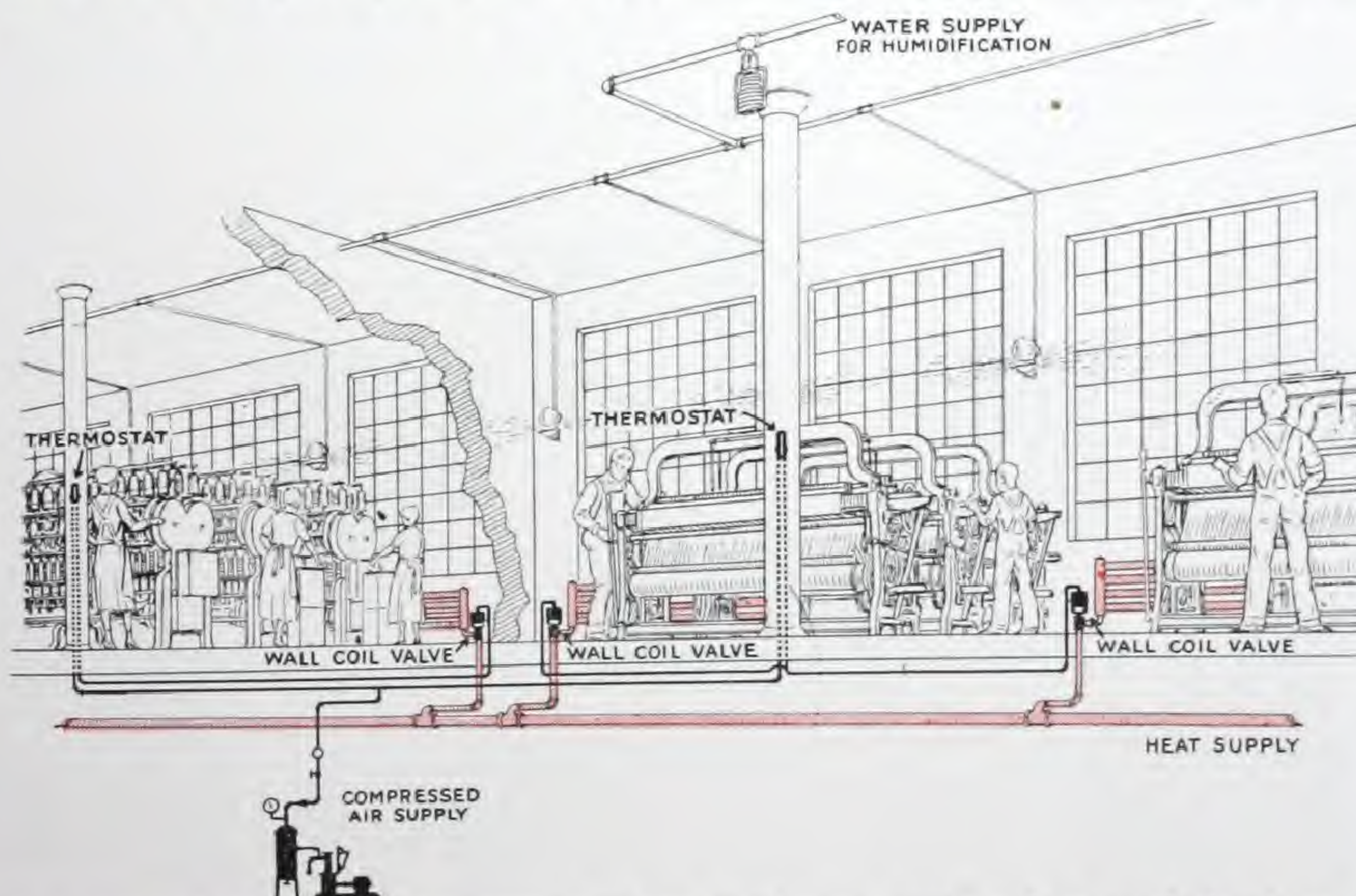


# THE POWERS REGULATOR COMPANY



## *Powers Control applied to Direct Heating Systems*

Rooms heated by direct radiation from steam, vapor, or hot water radiators and wall coils. Compressor furnishes air at 15 lbs. per sq. in. Pipes deliver this to thermostats in rooms to be controlled.



Thermostats control delivery of compressed air to diaphragm motor valves regulating heat supply to radiators or wall coils.



## SHOP AND OFFICE TEMPERATURES

times exactly the air pressure required to position correctly the heat controlling valves. No air is used by this thermostat except what is necessary to accomplish the desired movement of the heat controlling valve. When that is accomplished, the air consumption stops and does not begin again until a change in the heat supply is necessary. All other thermostats have a "leak-port" which involves a continuous waste of air either while the controlling valve is closed or open. Excessive use of air by thermostats will introduce excessive quantities of dirt and moisture into a system of air piping, all of which is bad for the thermostats. The Powers Thermostat uses about 10 per cent of the air required for other systems. Furthermore, it has no finely restricted air passages or leak ports and, because of the powerful thermostatic disc, requires no motion-multiplying devices.

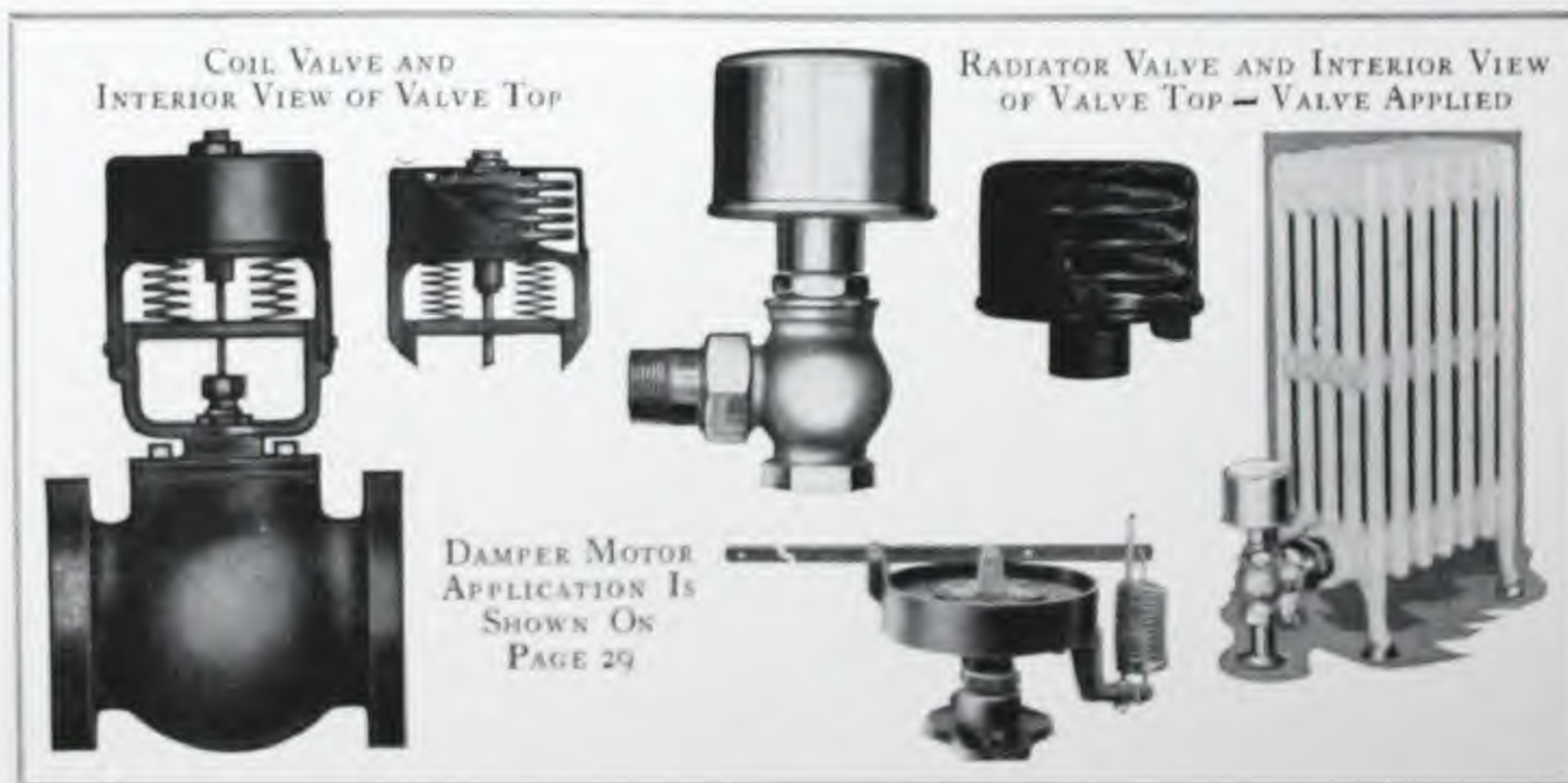
### *Powers All Metal Diaphragm Valves*

The metal diaphragm is in bellows form and of the built-up construction, a series of

flexible discs being formed and assembled by die process. These discs are made from a special grade of phosphor bronze of exceeding toughness and elasticity. They are formed without subjecting the metal to excessive strain or deformation, so that perfect elasticity is assured. Any required number of sections may be used, so that no disc is ever required to expand beyond its elastic limit and the full lift of the valve is always secured. All metal used in these valves is subjected to tests equivalent to more than fifty years of practical operation.

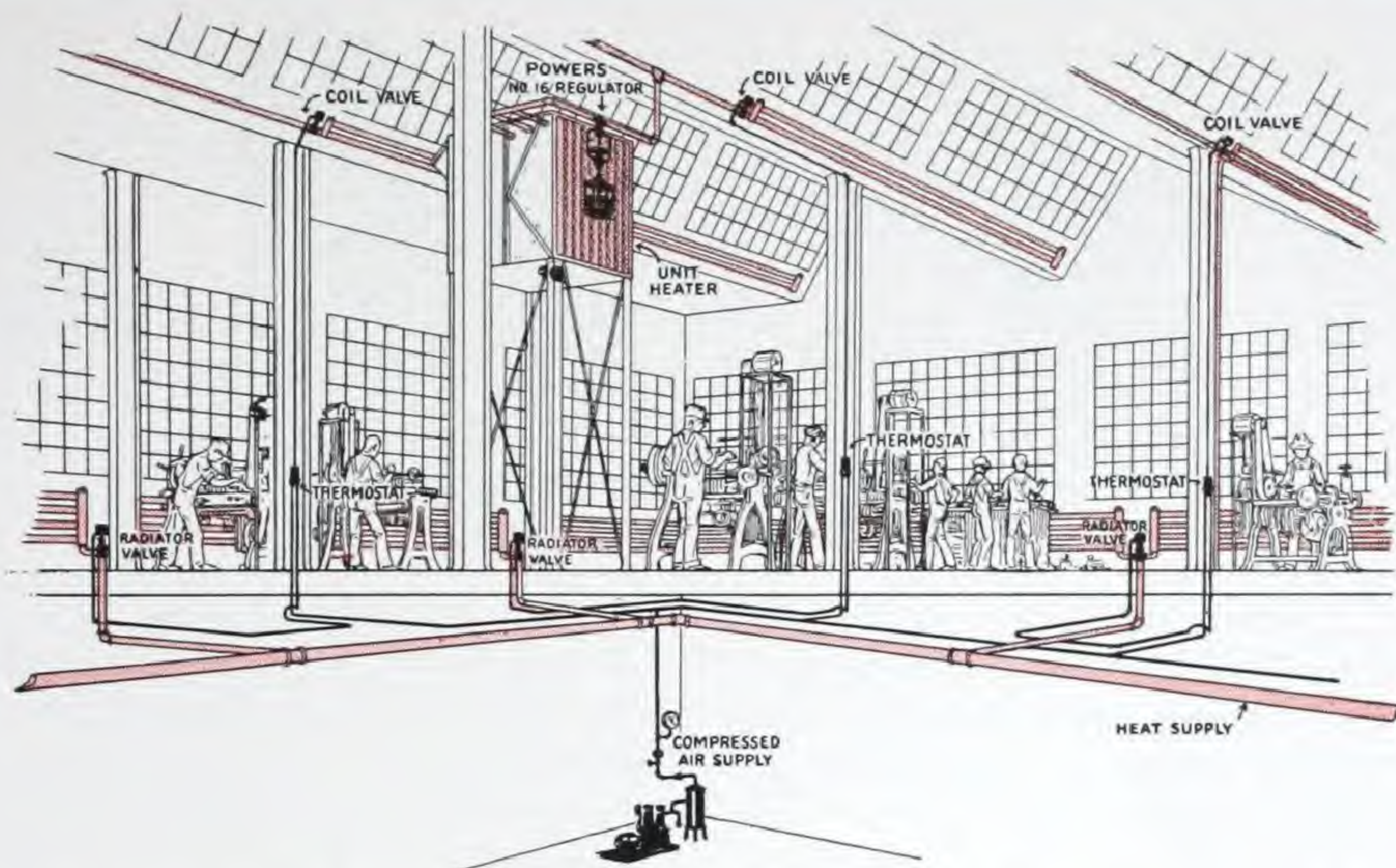
### *Radiator Valve*

Powers radiator valves are made entirely of brass and bronze. They are small and compact—in ordinary sizes the top is only four inches in diameter—the smooth exterior gives a very pleasing appearance, is easily cleaned, and offers no dust-catching surfaces. The finish is polished nickel unless it is desired to match other finish by painting or bronzing. The valves have bodies of bronze steam metal and are fitted with genuine Jenkins discs.

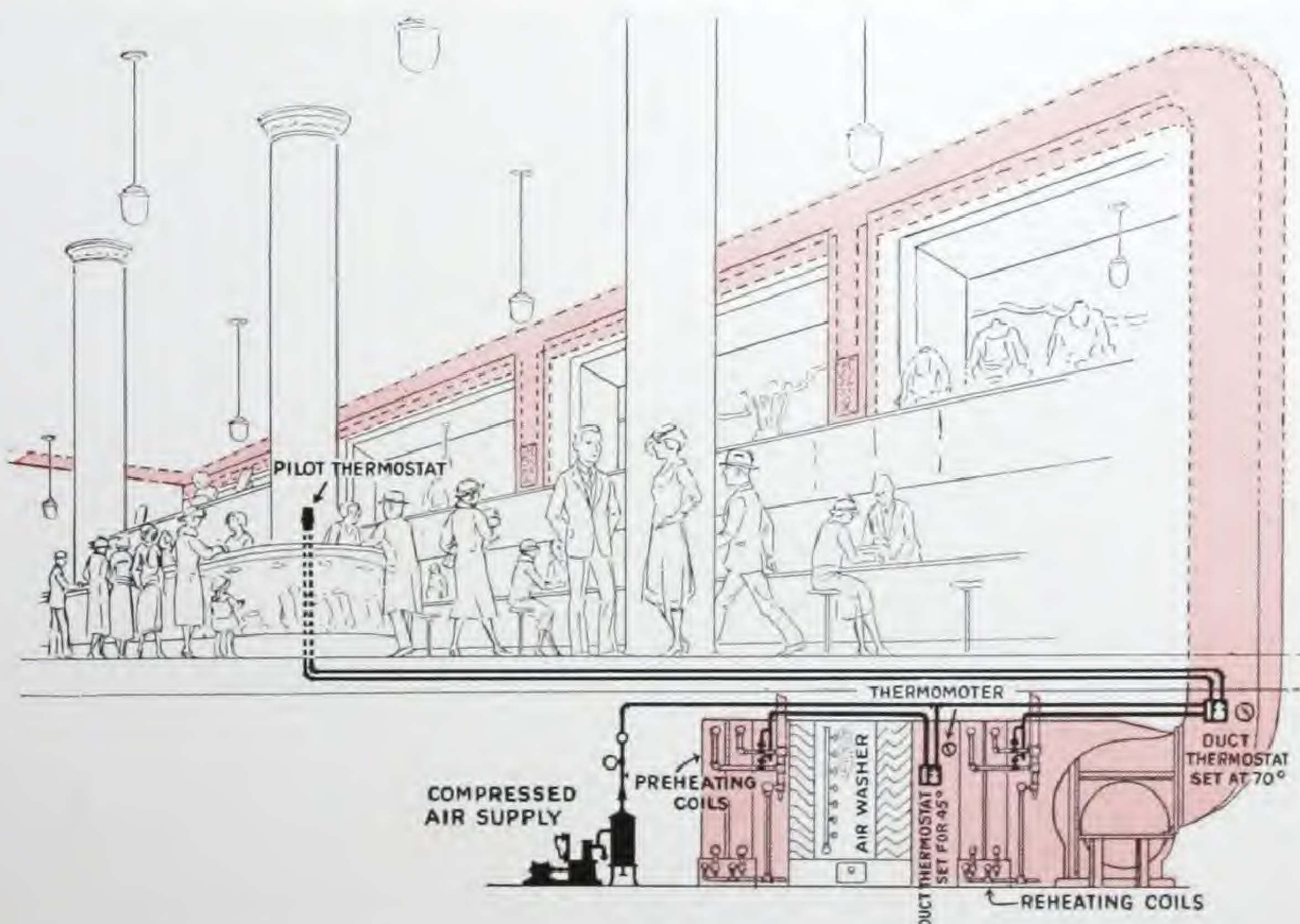




# THE POWERS REGULATOR COMPANY



*Powers Control applied to Direct Heating System and Unit Heater and Ventilator*  
Self-contained regulator controlling unit heater is shown on page 30.

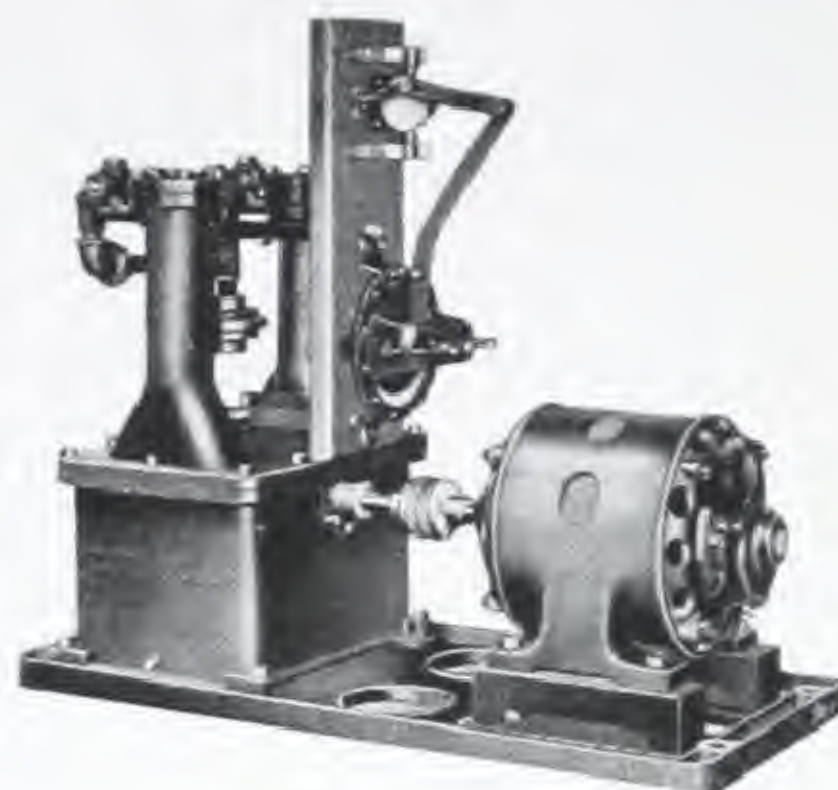


*Powers Control applied to Ventilating System with Air Washer in a Department Store*



# SHOP AND OFFICE TEMPERATURES

POWERS No. 3  
ELECTRIC  
AIR COMPRESSOR



POWERS No. 18  
ELECTRIC  
AIR COMPRESSOR



## Steam Coil Valves

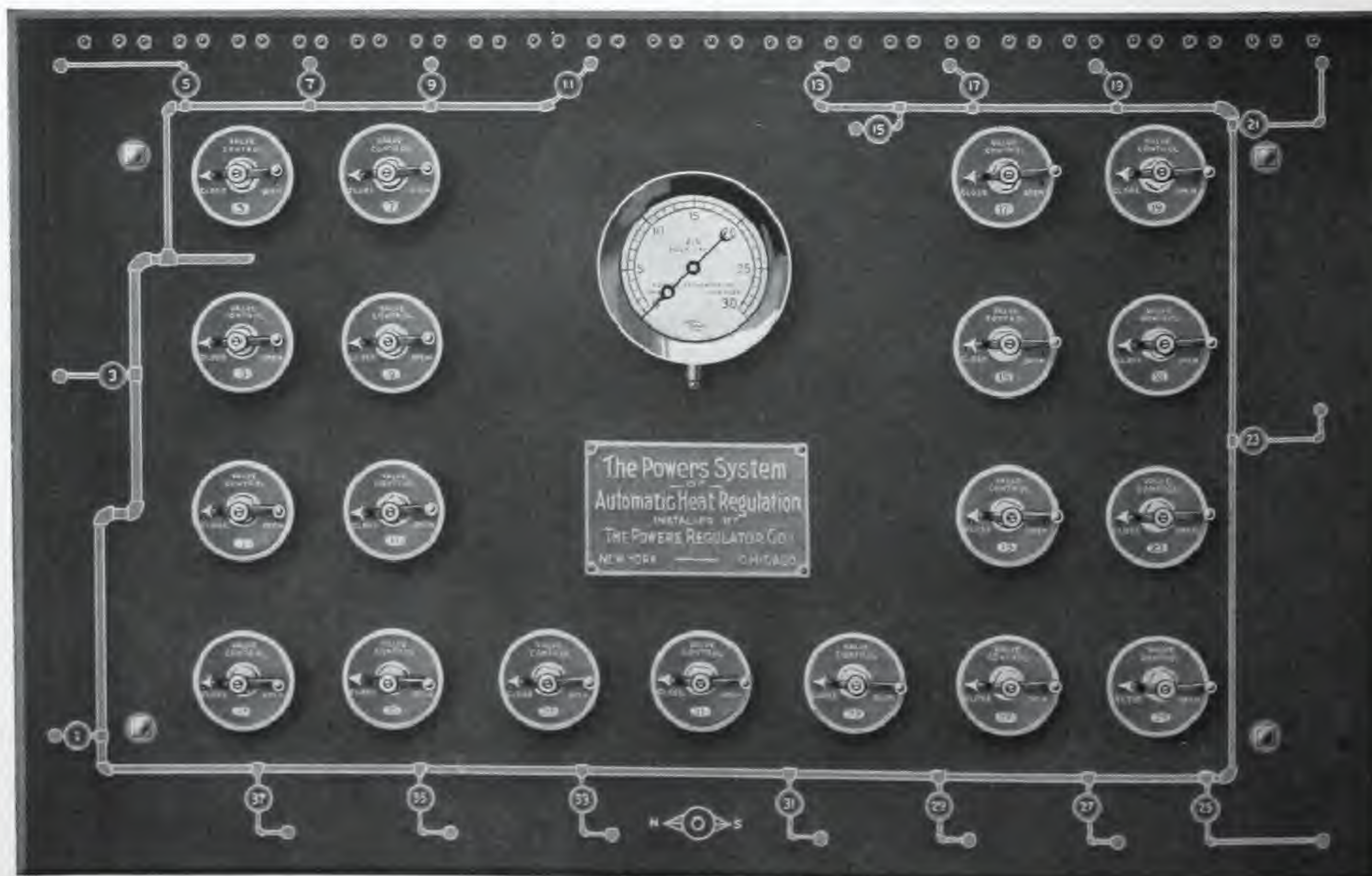
The valves used for the control of ventilating and heating coils have the same bronze bellows construction, but enclosed in steel housings. They are made in all standard sizes and with bodies of all standard patterns.

## Damper Motors

Damper motors are used for the operation of ventilating dampers. These motors are provided with a sectional bellows similar to that used in the all metal radiator or coil valves previously described. With the aid of compressed

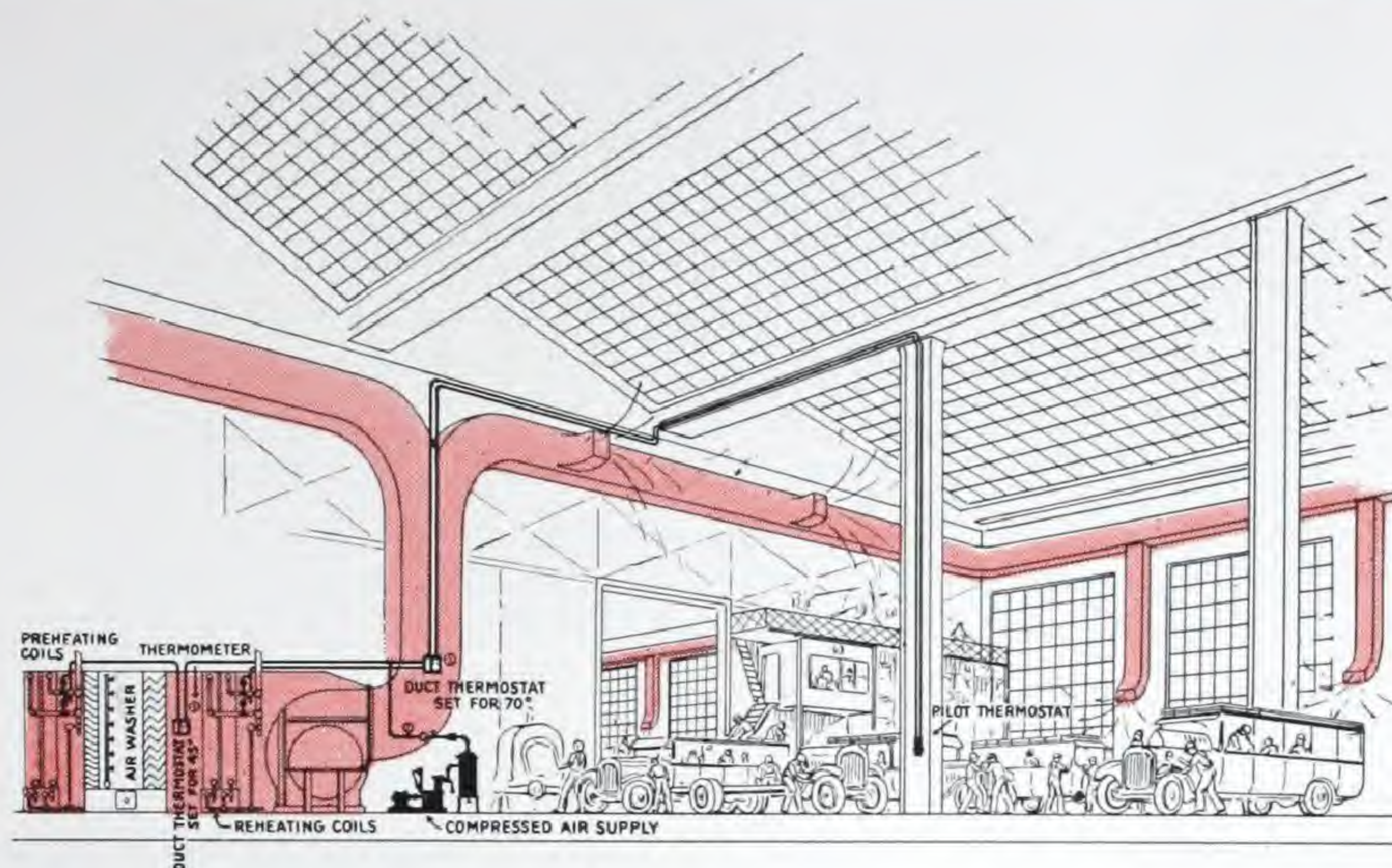
## SWITCHBOARD FOR REMOTE CONTROL OF RISERS OR HEATING MAINS

Numbers encircled on board show approximate position of risers controlled by switches

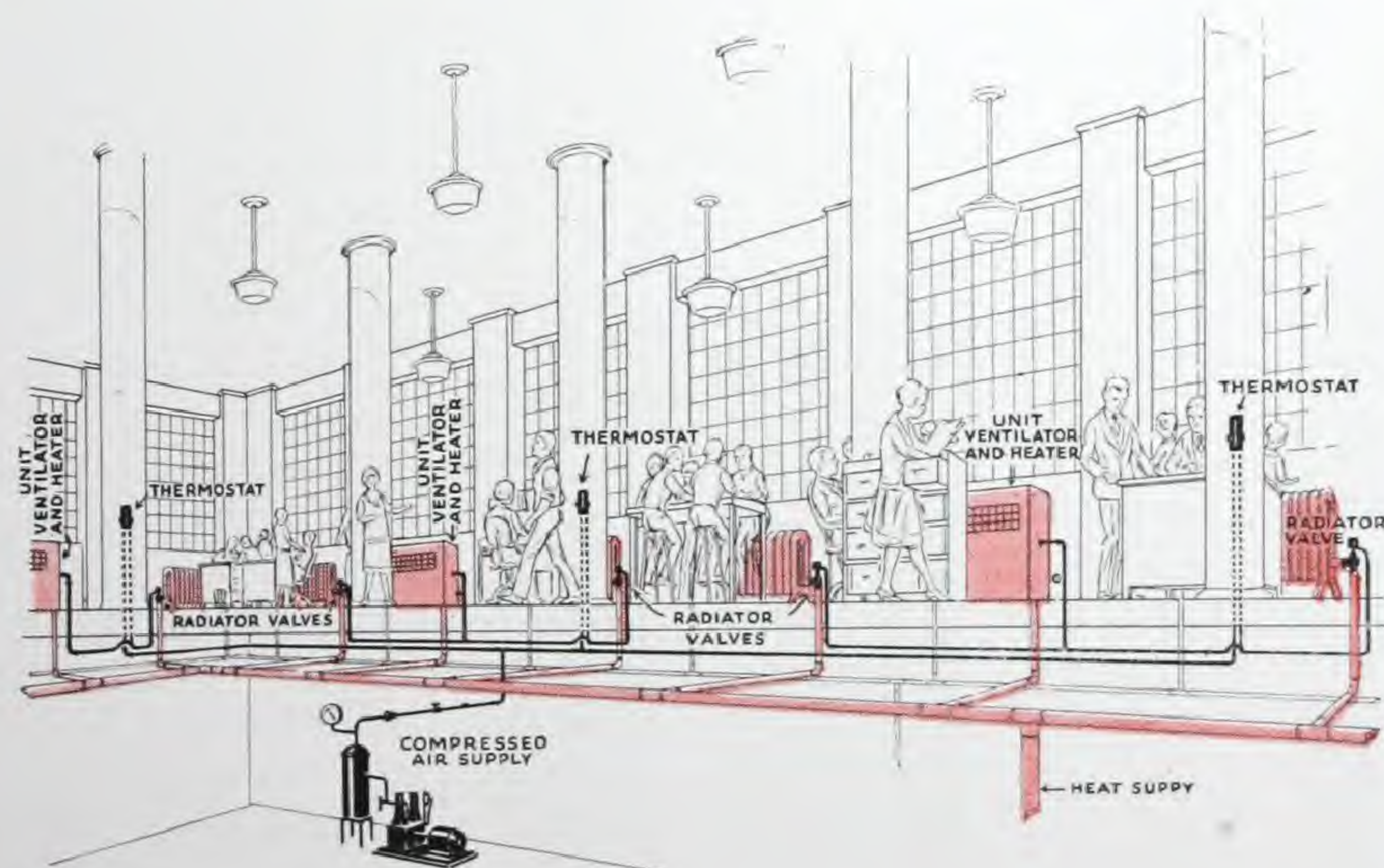




# THE POWERS REGULATOR COMPANY



*Powers Control applied to Ventilating System with Air Washer, in an Industrial Plant*



*Powers Control applied to Direct Heating System and Unit Ventilators and Heaters*



air these motors have sufficient power to operate the largest dampers. See illustration on opposite page.

### *Powers Pneumatic Switch for Remote Control*

The control by means of compressed air of inaccessible dampers and valves is a most desirable adjunct to a system of automatic heat regulation, and is generally included as a part of the heat regulation contract.

A ventilating system frequently comprises means of bringing in fresh air, exhausting used air, and also ducts and equipment which permit of re-circulating the air within the building under certain conditions. This calls for large dampers—usually of the louvre type—controlling the fresh air intake, foul air exhaust and re-circulating ducts, and these dampers may be of varying sizes and very distant from each other.

By the use of the Powers Pneumatic Switch the entire operation of these dampers can be localized on a switchboard placed conveniently in the heater room. See switchboard on page 29. Compressed air is piped to the switchboard and from that point to the several dampers which are operated by damper motors such as previously described. A similar arrangement may be used for directing forced heat and ventilation to certain portions of the

building. Again, in large buildings, each heat riser may be equipped with a diaphragm valve and placed under the control of a central switchboard, enabling the engineer to cut off the heat from different parts of the building at will. See switchboard on page 26.

The Powers Pneumatic Switch is of very sturdy construction and can be relied upon to remain tight and to function indefinitely. The switchboards used with a group of these switches are usually of slate, and exposed fittings, name-plates, etc., may be of polished nickel or brass.

### *The Powers Hygrostat*

This is a very reliable instrument for the control of humidity artificially supplied by means of steam spray, air washer or evaporating pan.

Supplied with compressed air, it functions exactly as the thermostat except that it passes air to diaphragm valve in accordance with varying humidity condition of space in which it is located.

Besides the control of room conditions, it is adapted to a variety of manufacturing processes in which the control of humidity is important.

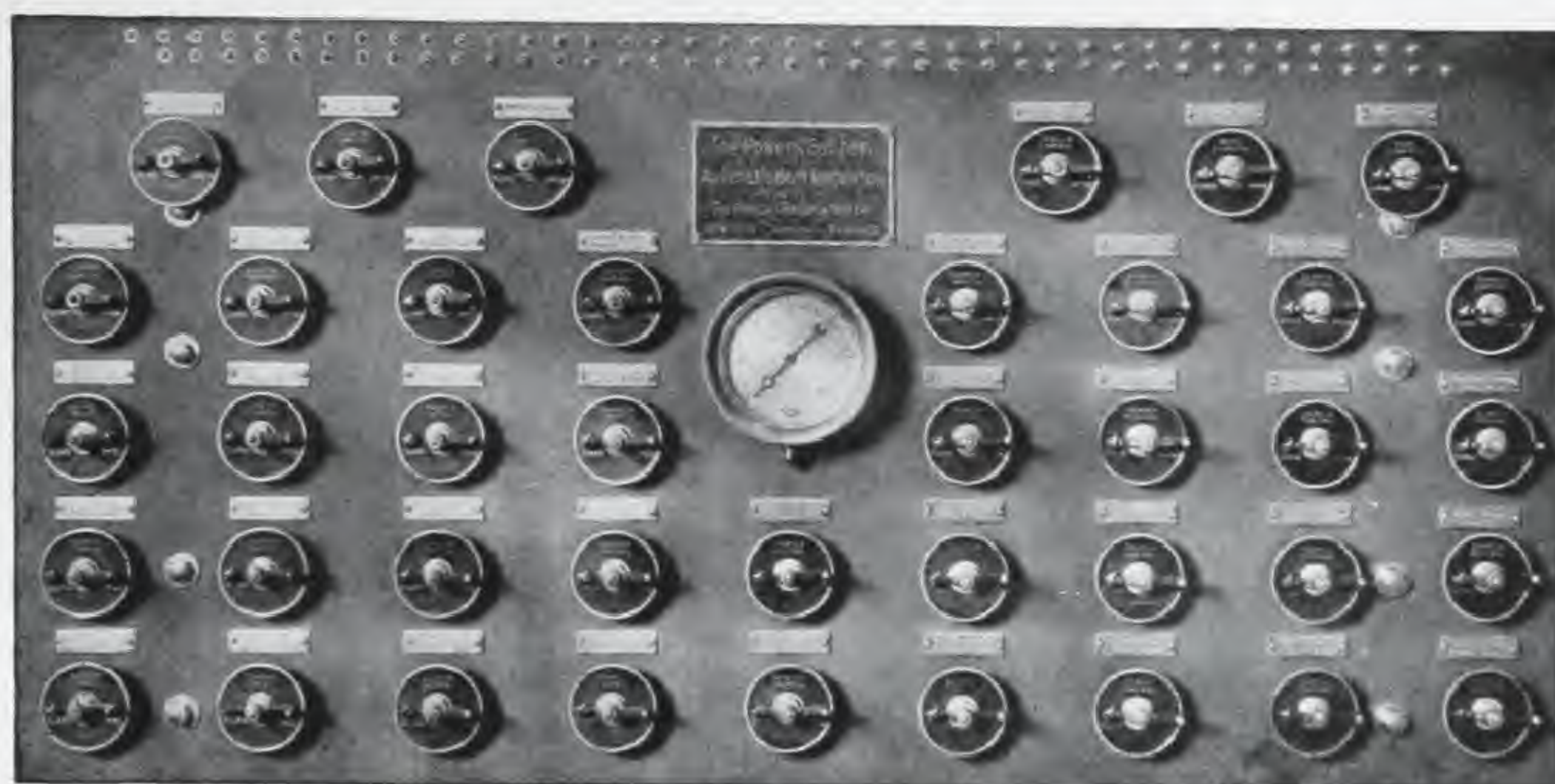
While the illustrations show the wall mounted instrument, it is supplied also for air duct insertion which adapts it particularly to air washer control.

POWERS HYGROSTAT  
FOR HUMIDITY CONTROL



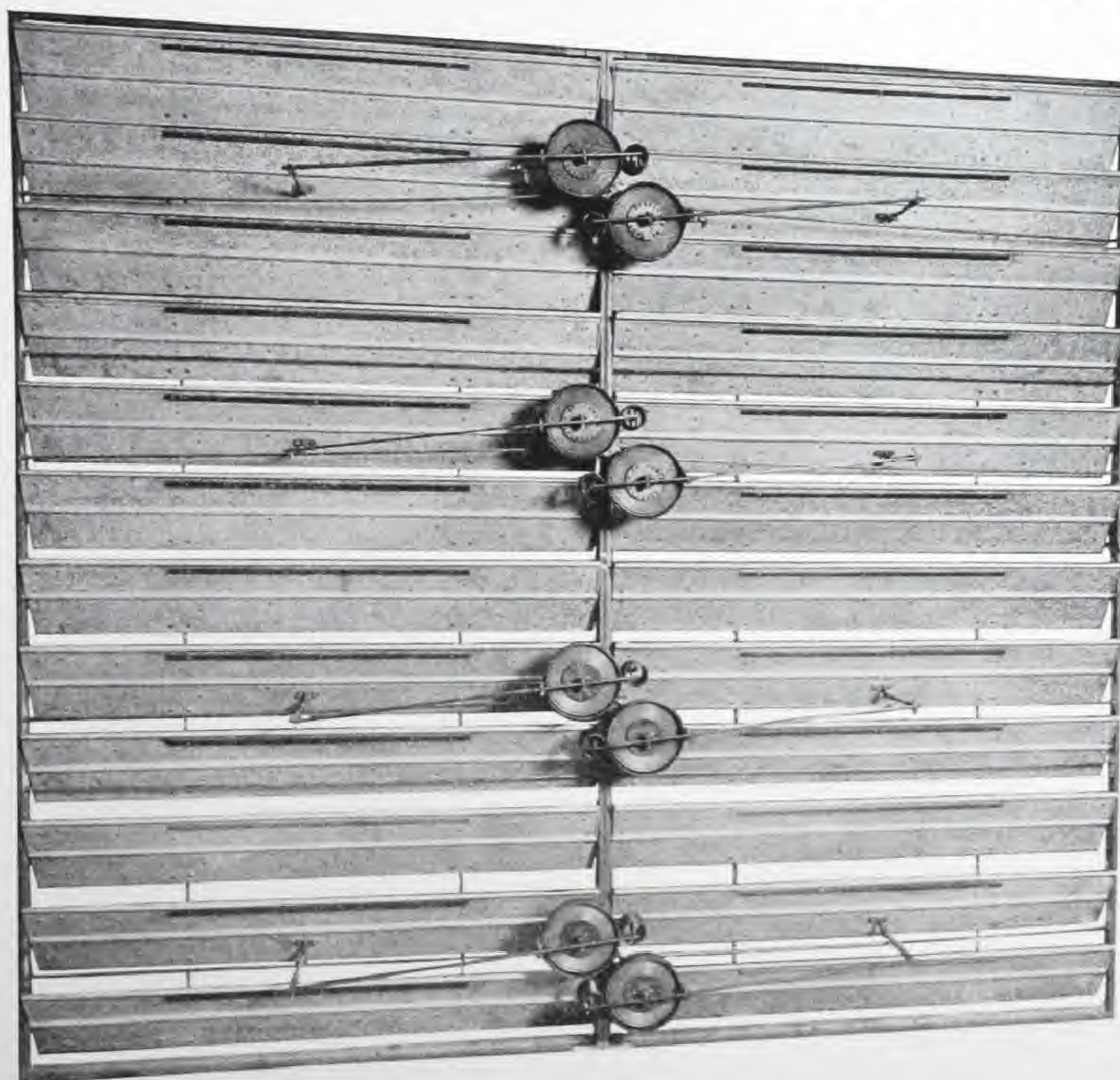


# THE POWERS REGULATOR COMPANY



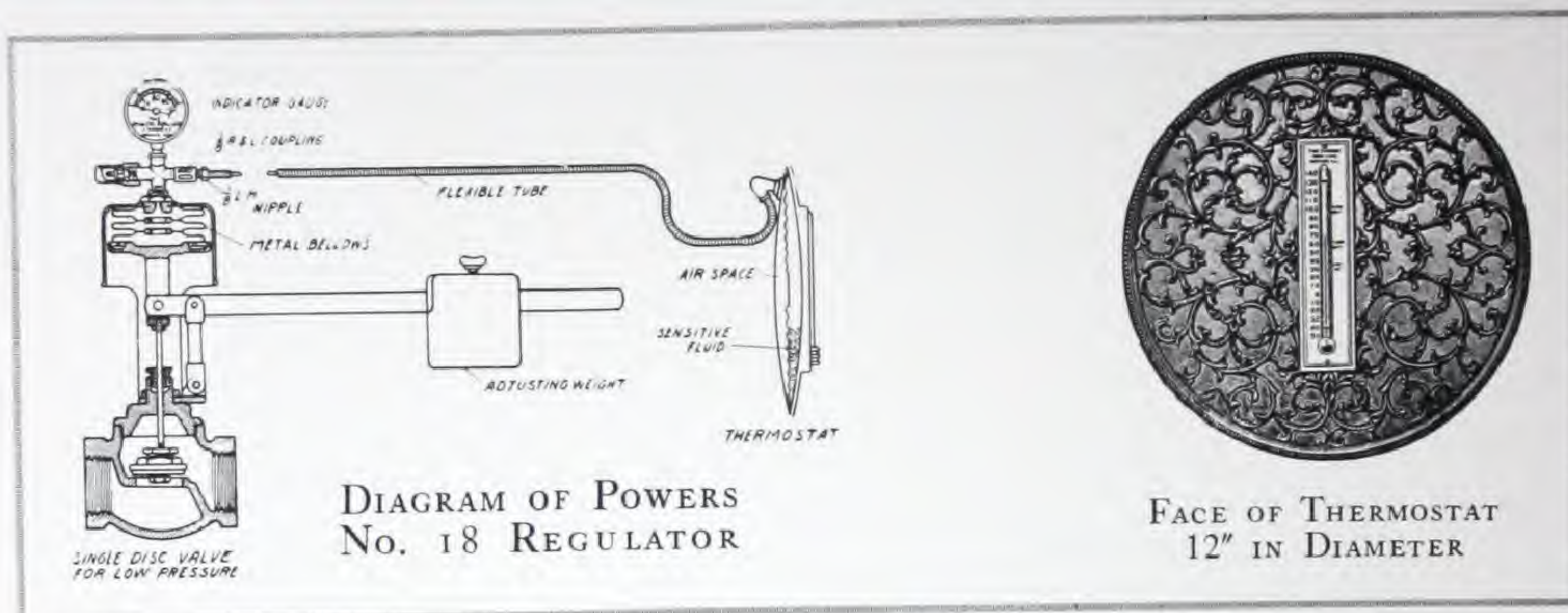
SWITCHBOARD (*above*) for remote control of Ventilating Dampers.

VENTILATING DAMPERS (*below*) operated by diaphragm motors. Small damper in workman's left hand is 4"; large one is 9'9"x9'.





# SHOP AND OFFICE TEMPERATURES



## Self-Contained Regulators

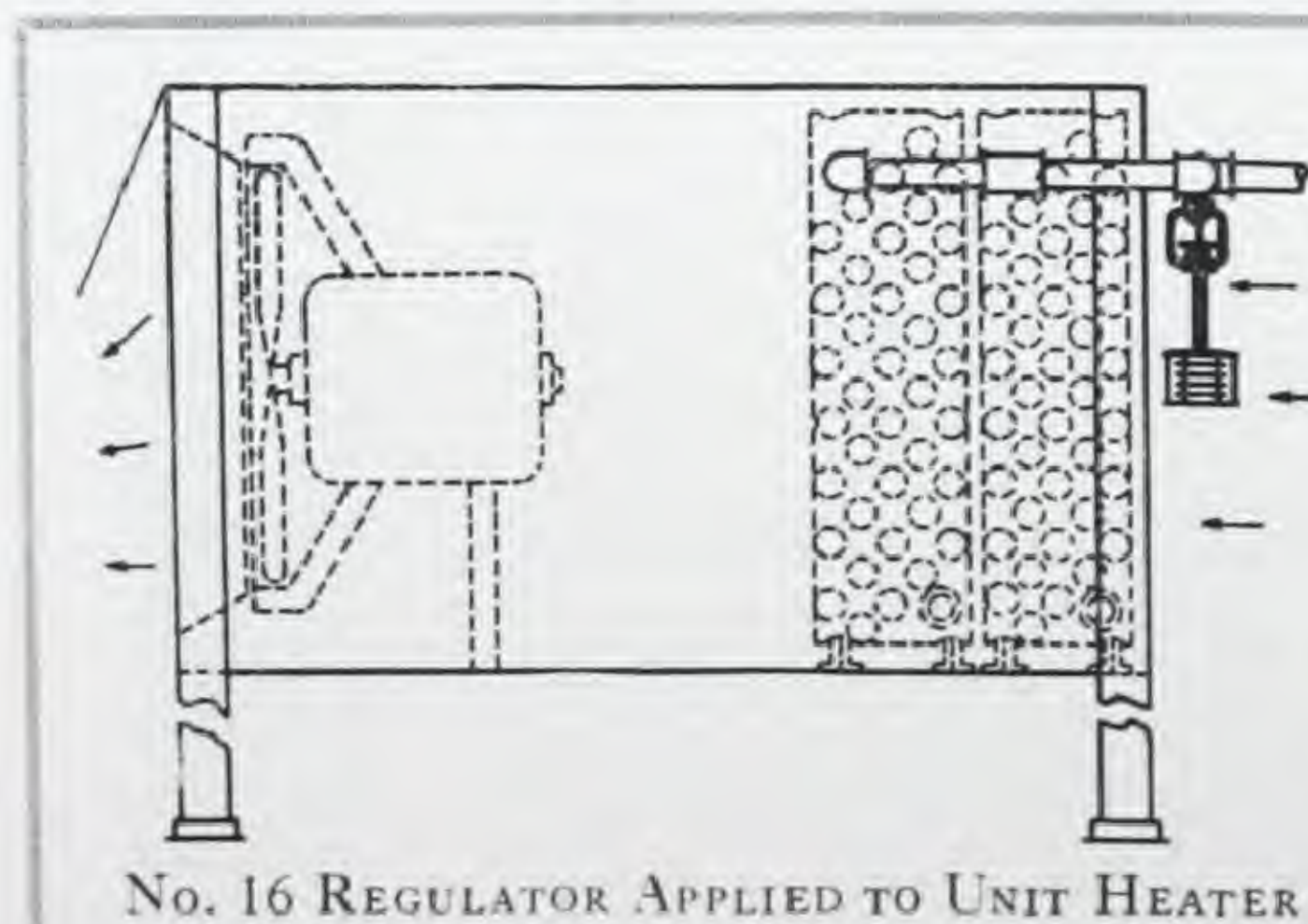
The Powers No. 18 Regulator shown above is a self-contained unit, not as sensitive in operation as the air pressure types but inexpensive and capable of good general control between the limits of 60° and 100° F., where such control can be obtained by the operation of a single valve regulating the heat supply. The control of this valve is gradual and an efficient return line vacuum system is essential.

This regulator is used in shops, offices, warehouses, storage rooms, low temperature

drying rooms, greenhouses, etc. Operation is described on opposite page.

Flexible connecting tube may be of any length up to 75 ft. for 2" to 4" valves, or 100 ft. for 1/2" to 1 1/2" valves. Tubing is usually of lead, closely armored with galvanized steel wire. Armored copper tubing can be furnished where conditions, such as excessive vibration, require its use.

Write for Bulletin No. 145, which gives prices and complete information.



### Powers No. 16 Regulator

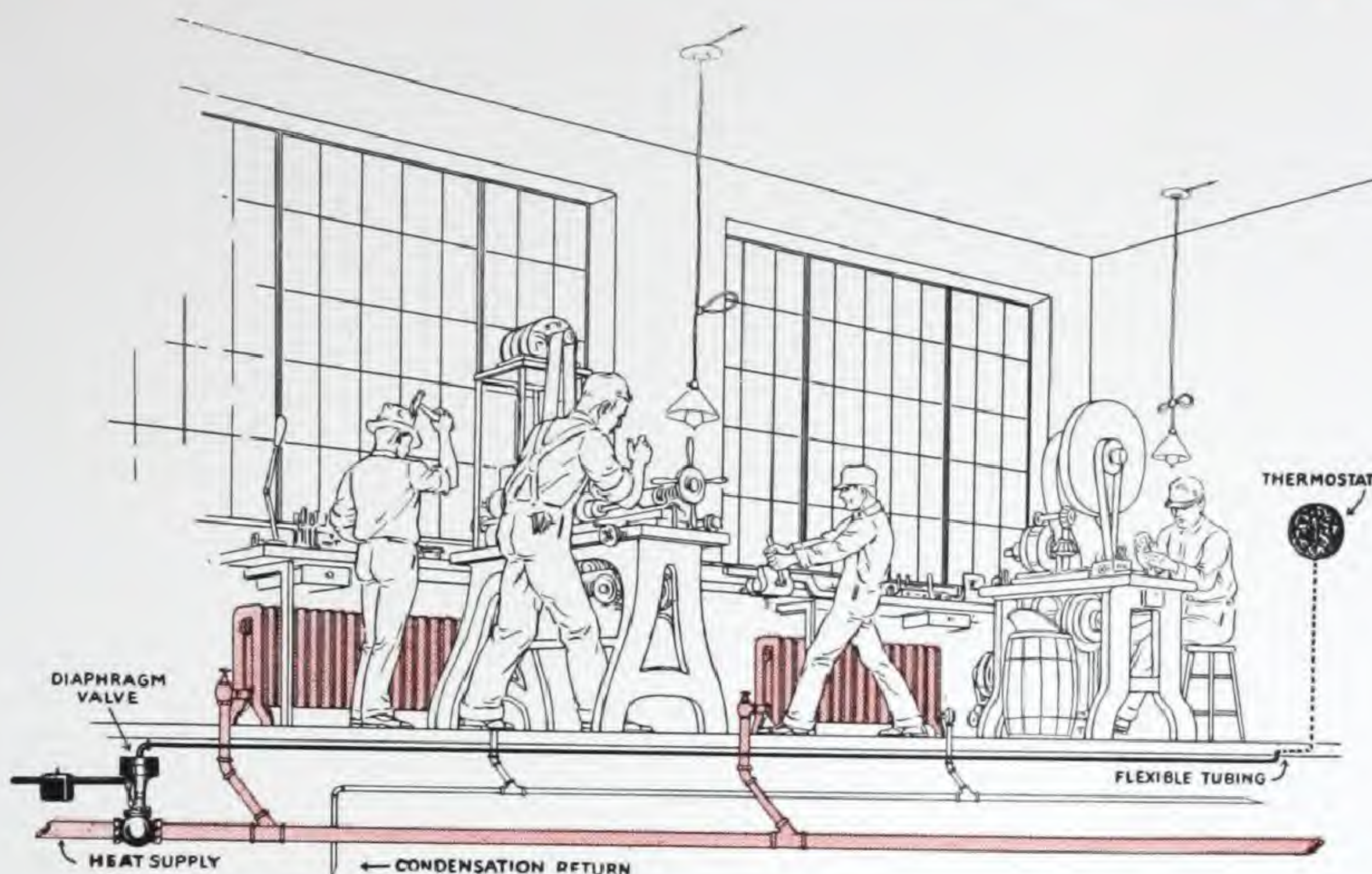
This is a self-contained regulator used to control the heat supply to recirculating unit heaters. Diagram at the left and drawing at top of page 25 show typical applications.

It is also used to control steam or gas heated dry rooms. Temperature range is 40° to 250° F. Range of adjustment on the individual instrument is 30°. Valve sizes 1/2" to 2 1/2". Bulletin No. 146 gives prices and complete information.



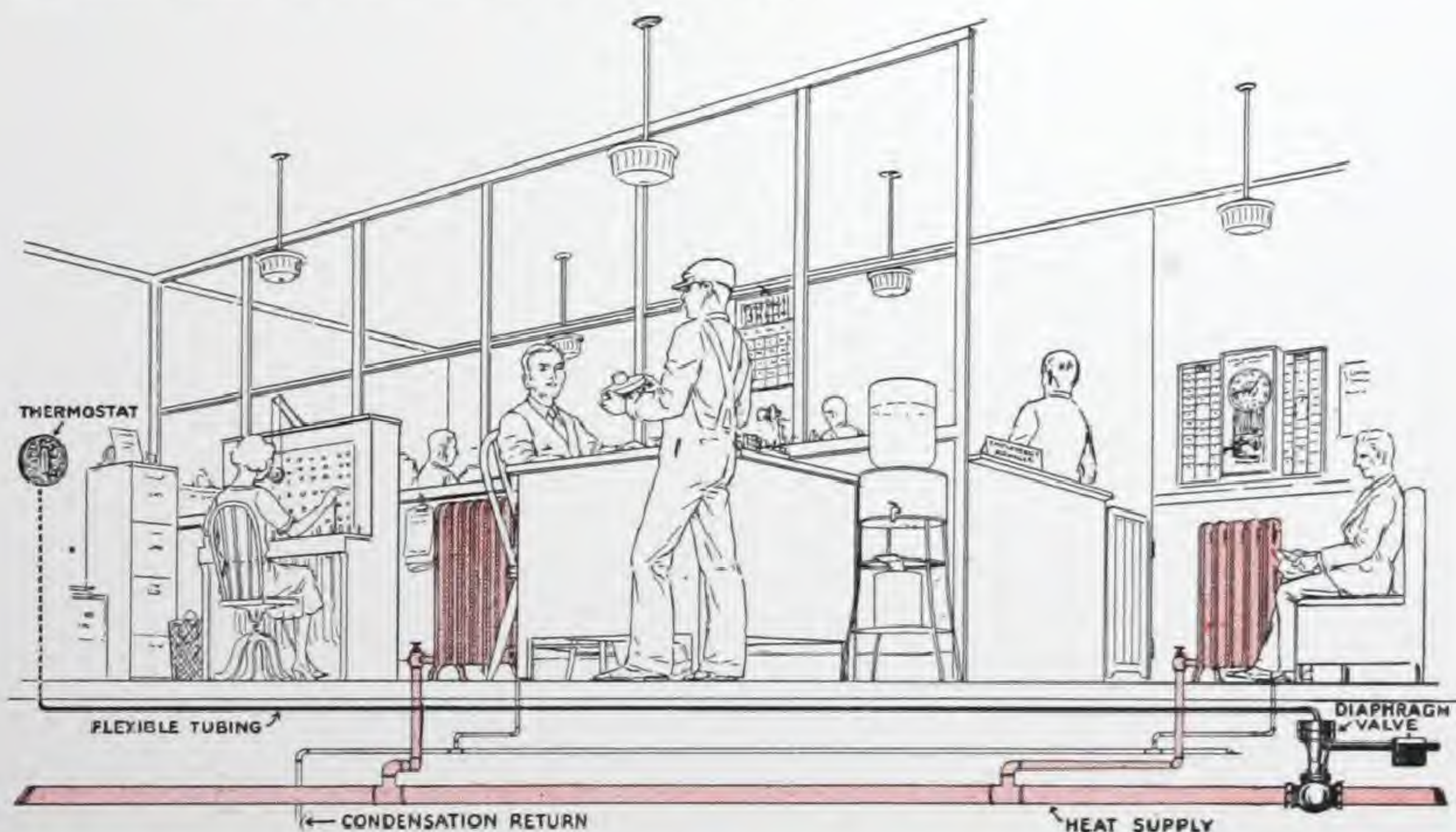


# THE POWERS REGULATOR COMPANY



## *Powers No. 18 Regulator applied to Direct Heating Systems*

Thermostat in diagram on opposite page contains a volatile thermostatic fluid. This fluid expands or contracts as room temperature rises or falls. Pressure exerted by this force operates metal bellows which closes or opens valve controlling the heat supply.



Pressure in bellows is always directly proportionate to the temperature at the thermostat, consequently position of adjusting weight on lever determines temperature at which valve will close, and operation is **GRADUAL**. Different temperatures over a 20° F. range are secured by changing position of adjusting weight.





## *Partial List of Users of Powers Room Temperature Control*

Wallace Barnes Co.	Bristol, Conn.	Stephenson Underwear Mills	South Bend, Ind.
New Departure Mfg. Co.	Bristol, Conn.	Independent Baking Co.	Davenport, Iowa
Mallory Hat Co.	Danbury, Conn.	Baltimore & Ohio Railway Annex	Baltimore, Md.
Tweedy Silk Mills, Inc.	Danbury, Conn.	American Woolen Co. (Offices)	Andover, Mass.
Condé Nast Publications, Inc.	Greenwich, Conn.	Merchants' National Bank Bldg.	Boston, Mass.
Hartford Fire Insurance Co.	Hartford, Conn.	New England Telephone & Telegraph Co.	Boston, Mass.
Orient Insurance Co.	Hartford, Conn.	Post Publishing Co.	Boston, Mass.
Phoenix Insurance Co.	Hartford, Conn.	George E. Keith Co.	Brockton, Mass.
Phoenix Mutual Life Insurance Co.	Hartford, Conn.	American Rubber Co.	Cambridge, Mass.
U. S. Rubber Co.	Hartford, Conn.	Boston Woven Hose & Rubber Co.	Cambridge, Mass.
Robert Gair Co.	Montville, Conn.	Elliott Addressing Machine Co.	Cambridge, Mass.
Goodyear India Rubber Glove Co.	Naugatuck, Conn.	Forbes Lithograph Mfg. Co.	Chelsea, Mass.
U. S. Rubber Co. (L. Candee & Co.)	New Haven, Conn.	Connecticut Cotton Mills	East Taunton, Mass.
Velvet Textile Corp.	West Haven, Conn.	Sagamore Mfg. Co.	Fall River, Mass.
Hecht Co.	Washington, D. C.	Draper Corp.	Hopedale, Mass.
National Sewing Machine Co.	Belvidere, Ill.	Lapointe Machine Tool Co.	Hudson, Mass.
Libby, McNeill & Libby	Blue Island, Ill.	Courier-Citizen Co.	Lowell, Mass.
Bell Building	Chicago, Ill.	Boston Rubber Shoe Co.	Malden, Mass.
Boston Store	Chicago, Ill.	Walter Baker & Co., Ltd.	Milton, Mass.
Cadillac Motor Car Co.	Chicago, Ill.	Boston Rubber Shoe Co.	Milton, Mass.
Carson, Pirie, Scott & Co.	Chicago, Ill.	Butler Mills	New Bedford, Mass.
Chicago Motor Coach Co.	Chicago, Ill.	Fairhaven Mills	New Bedford, Mass.
Commonwealth Edison Co. (Fisk St. Station)	Chicago, Ill.	New England Telephone & Telegraph Co.	
Crane Co. (Corwith Plant)	Chicago, Ill.	(Offices)	New Bedford, Mass.
Curtis Door & Sash Co.	Chicago, Ill.	Holtzer-Cabot Electric Co. (Offices)	Roxbury, Mass.
Fleischmann Co.	Chicago, Ill.	Hamilton Woolen Co.	Southbridge, Mass.
Oscar Heineman Co.	Chicago, Ill.	Hendee Mfg. Co.	Springfield, Mass.
B. Heller & Co.	Chicago, Ill.	Peirce Brothers	Waltham, Mass.
Home Bank & Trust Co.	Chicago, Ill.	Wilkins Potter Press	Waltham, Mass.
Ilg Electric Ventilating Co.	Chicago, Ill.	Graton & Knight Mfg. Co.	Worcester, Mass.
Illinois Bell Telephone Co.	Chicago, Ill.	Stockbridge Machine Co.	Worcester, Mass.
Livingston Baking Co.	Chicago, Ill.	Wyman-Gordon Co.	Worcester, Mass.
Mandel Brothers	Chicago, Ill.	Chrysler Corporation	Detroit, Mich.
Manz Corporation	Chicago, Ill.	Michigan State Telephone Co. (Offices)	Detroit, Mich.
Marshall Field & Co.	Chicago, Ill.	Frederick Stearns & Co.	Detroit, Mich.
S. A. Maxwell & Co., Inc. (Offices)	Chicago, Ill.	Dodge Brothers (Offices)	Hamtramck, Mich.
National Malleable Steel Castings Co. (Offices)	Chicago, Ill.	Walker Candy Corp.	Muskegon, Mich.
North Western Yeast Co. (Offices)	Chicago, Ill.	Lufkin Rule Co.	Saginaw, Mich.
People's Trust & Savings Bank of Chicago	Chicago, Ill.	Federal Reserve Bank	Kansas City, Mo.
Rothacker Film Mfg. Co.	Chicago, Ill.	Irving-Pitt Mfg. Co.	Kansas City, Mo.
Joseph T. Ryerson & Son, Inc.	Chicago, Ill.	Journal-Post Bldg.	Kansas City, Mo.
Adam Schaaf, Inc.	Chicago, Ill.	Morris & Co.	Kansas City, Mo.
Sears, Roebuck & Co.	Chicago, Ill.	Niles & Moser Cigar Co.	Kansas City, Mo.
Spaulding & Merrick (Offices)	Chicago, Ill.	Sears, Roebuck & Co.	Kansas City, Mo.
Vaughan's Seed Store	Chicago, Ill.	Metals Bank & Trust Co.	Butte, Mont.
Western Shade Cloth Co.	Chicago, Ill.	Gold & Co.	Lincoln, Nebr.
Wm. Wrigley Jr. Co.	Chicago, Ill.	Rudge & Guenzel Co.	Lincoln, Nebr.
Yellow Truck & Coach Mfg. Co.	Chicago, Ill.	Burgess-Nash Department Store	Omaha, Nebr.
George Wittbold Co.	Edgebrook, Ill.	Swift & Co.	Omaha, Nebr.
W. T. Rawleigh Co.	Freeport, Ill.	Brown Co. (Offices)	Berlin, N. H.
Thayer Action Co.	Rockford, Ill.	Rumford Printing Co.	Concord, N. H.
Franklin Life Insurance Co.	Springfield, Ill.	Scott & Williams, Inc.	Lakeport, N. H.
Diamond Chain & Mfg. Co.	Indianapolis, Ind.	J. F. McElwain Co. (Cohas Factory)	Manchester, N. H.
Eli Lilly & Co.	Indianapolis, Ind.	Henry Doherty Silk Co.	Clifton, N. J.
Rockwood Mfg. Co.	Indianapolis, Ind.	Durant Motor Co. of New Jersey	Elizabeth, N. J.





# THE POWERS REGULATOR COMPANY



Edison Lamp Works (Offices)..... Harrison, N. J.  
 Barbour Flax Spinning Co..... Kearny, N. J.  
 Carrier Engineering Co. (Offices)..... Newark, N. J.  
 New York Belting & Packing Co..... Passaic, N. J.  
 Doherty & Wadsworth Co..... Paterson, N. J.  
 Linen Thread Co. (Grand St. Plant)..... Paterson, N. J.  
 International Motor Co. (Mack Trucks)..... Plainfield, N. J.  
 Julius Kayser Co..... Brooklyn, N. Y.  
 Du Pont Fibre Silk Co..... Buffalo, N. Y.  
 Larkin Soap Co..... Buffalo, N. Y.  
 Finch, Pruyn & Co., Inc..... Glens Falls, N. Y.  
 American News Co..... New York, N. Y.  
 Cadillac Motor Car Co..... New York, N. Y.  
 Central Union Trust Co. of N. Y..... New York, N. Y.  
 Consolidated Gas Co. of N. Y..... New York, N. Y.  
 M. Knoedler & Co..... New York, N. Y.  
 New York Times Annex..... New York, N. Y.  
 New York Tribune Bldg..... New York, N. Y.  
 Northern Union Gas Co..... New York, N. Y.  
 Otis Elevator Co..... New York, N. Y.  
 Peerless Motor Co..... New York, N. Y.  
 Press Publishing Co..... New York, N. Y.  
 Steinway Building..... New York, N. Y.  
 Sutphen & Meyer..... New York, N. Y.  
 Waterman Fountain Pen Co. (Offices)..... New York, N. Y.  
 Worthington Pump Co. (Offices)..... New York, N. Y.  
 Vaucauson Silk Mills..... Port Jervis, N. Y.  
 Edison Lamp Works (Offices)..... Schenectady, N. Y.  
 Otis Elevator Co..... Yonkers, N. Y.  
 Goodyear Tire & Rubber Co..... Akron, Ohio  
 B. F. Goodrich Co. (Offices)..... Akron, Ohio  
 Faultless Rubber Co..... Ashland, Ohio  
 Atkins & Pearce Mfg. Co..... Cincinnati, Ohio  
 Citizens' National Bank & Trust Co..... Cincinnati, Ohio  
 Crane & Breed Mfg. Co..... Cincinnati, Ohio  
 Gruen Watch Co..... Cincinnati, Ohio  
 H. & S. Pogue Co..... Cincinnati, Ohio  
 Union Distilling Co..... Cincinnati, Ohio  
 W. Bingham Co..... Cleveland, Ohio  
 Bourne-Fuller Co. (Upson Works Office)..... Cleveland, Ohio  
 Citizens Savings & Trust Co..... Cleveland, Ohio  
 Cleveland Discount Bldg..... Cleveland, Ohio  
 Guardian Bank Bldg..... Cleveland, Ohio  
 Industrial Fibre Co..... Cleveland, Ohio  
 National Lamp Works Co. (Bldgs. No. 2  
 and No. 60)..... Cleveland, Ohio  
 National Malleable & Steel Castings Co..... Cleveland, Ohio  
 Perfection Stove Co., Inc..... Cleveland, Ohio  
 Daily News Bldg..... Dayton, Ohio  
 Dayton-Wright Airplane Co..... Dayton, Ohio  
 Delco Light Co. (Bldgs. No. 5 and No. 12)..... Dayton, Ohio  
 Mosler Safe Co..... Hamilton, Ohio  
 Mason Tire & Rubber Co..... Kent, Ohio  
 Boss Mfg. Co..... Toledo, Ohio  
 Bunting Bronze & Brass Co..... Toledo, Ohio  
 First National Bank Bldg..... Toledo, Ohio  
 Willys-Overland Co..... Toledo, Ohio  
 McCrory Stores..... Youngstown, Ohio  
 Oklahoman Newspaper Bldg..... Oklahoma City, Okla.  
 Meier & Frank Co..... Portland, Ore.  
 Allentown Silk Co..... Allentown, Pa.

Doherty & Wadsworth Co..... Allentown, Pa.  
 DuBois Brewing Co..... DuBois, Pa.  
 Zollinger & Schroth, Inc..... Emaus, Pa.  
 Doutrich & Co..... Harrisburg, Pa.  
 Susquehanna Silk Co..... Huntingdon, Pa.  
 Armstrong Cork Co. (Linoleum Division)..... Lancaster, Pa.  
 Proctor & Schwartz, Inc..... Philadelphia, Pa.  
 Sears, Roebuck & Co..... Philadelphia, Pa.  
 Wilkes-Barre Silk Co..... Wilkes-Barre, Pa.  
 Penn Textile Co..... Central Falls, R. I.  
 Stillwater Worsted Mills..... Harrisville, R. I.  
 Branch River Wool Combing Co..... North Smithfield, R. I.  
 Woonsocket Rubber Co..... Woonsocket, R. I.  
 Riverside & Dan River Cotton Mills..... Danville, Va.  
 Dexter-Horton National Bank..... Seattle, Wash.  
 Sears, Roebuck & Co..... Seattle, Wash.  
 Washington Mutual Bank..... Seattle, Wash.  
 C. L. Colman Lumber Co..... La Crosse, Wis.  
 J. I. Case Threshing Machine Co..... Racine, Wis.

## CANADA

Marshall-Wells Alberta Co., Ltd..... Edmonton, Alta.  
 National Trust Co., Ltd..... Edmonton, Alta.  
 North-West Biscuit Co., Ltd..... Edmonton, Alta.  
 Allan, Killam & Mackay..... Winnipeg, Man.  
 Boyd Bldg..... Winnipeg, Man.  
 Canada Bread Co., Ltd..... Winnipeg, Man.  
 Canada Permanent Mortgage Corp..... Winnipeg, Man.  
 Commercial Travelers Bldg..... Winnipeg, Man.  
 Curry Bldg..... Winnipeg, Man.  
 Dominion Bank..... Winnipeg, Man.  
 Grain Exchange..... Winnipeg, Man.  
 Great West Life Bldg..... Winnipeg, Man.  
 Home Investment & Savings Assn..... Winnipeg, Man.  
 Merchants Bank..... Winnipeg, Man.  
 Molsons Bank..... Winnipeg, Man.  
 Oldfield, Kirby & Gardner..... Winnipeg, Man.  
 Swift Canadian Co., Ltd..... Winnipeg, Man.  
 Union Trust Co., Ltd..... Winnipeg, Man.  
 Dominion Steel Products..... Brantford, Ont.  
 Bank of Nova Scotia..... Hamilton, Ont.  
 Canadian Westinghouse Co., Ltd..... Hamilton, Ont.  
 Hamilton Cotton Co., Ltd..... Hamilton, Ont.  
 Steel Co. of Canada, Ltd..... Hamilton, Ont.  
 Ames-Holden Tire & Rubber Co..... Kitchener, Ont.  
 Holeproof Hosiery Co. of Canada, Ltd..... London, Ont.  
 Bank of Montreal..... Toronto, Ont.  
 Bank of Nova Scotia..... Toronto, Ont.  
 Dominion Bank..... Toronto, Ont.  
 Dunlop Tire & Rubber Goods Co., Ltd..... Toronto, Ont.  
 Imperial Oil Refineries, Ltd..... Toronto, Ont.  
 Merchants Bank..... Toronto, Ont.  
 Palmolive Co. of Canada, Ltd..... Toronto, Ont.  
 Swift Canadian Co., Ltd..... Toronto, Ont.  
 Temple Bldg..... Toronto, Ont.  
 Toronto Carpet Mfg. Co., Ltd..... Toronto, Ont.  
 Canadian Bank of Commerce..... Montreal, Que.  
 Drummond Bldg..... Montreal, Que.  
 Co-Operative Elevator Co..... Regina, Sask.



## SHOP AND OFFICE TEMPERATURES



### ROBERT GAIR COMPANY

THAMES RIVER DIVISION  
NEW LONDON, CONN.

February 2, 1926.

The Powers Regulator Co.,  
2720 Greenview Avenue,  
Chicago, Ill.

Gentlemen:-

The Powers Regulation installed in the Corrugated Department of our Thames River Division at Montville, Conn., has solved a long standing problem: the dependable control of humidity in this large manufacturing room, 460' x 200'.

The installation has functioned perfectly since its completion January 1924, and requires little or no attention. The vagaries of Mother Nature are no longer troublesome because by means of your device we now automatically and consistently make our own climate.

Very truly yours,

ROBERT GAIR COMPANY

*H. E. Hasty*  
Resident Manager



THE ROBERT GAIR  
COMPANY  
*Manufactures Paper  
Boxes and Cartons*







# THE POWERS REGULATOR COMPANY



ESTABLISHED 1888.

INCORPORATED 1911.

A. E. TWEEDY,  
PRESIDENT.  
E. T. HOYT,  
TREASURER  
J. D. BIGGS,  
SECRETARY

OFFICE & FACTORY  
EAST FRANKLIN STREET.



**American Hat Bands & Braids.**

*Danbury, Conn. Feb. 9th, 1926*

The Powers Regulator Co.  
2720 Greenview Ave.  
Chicago, Illinois

Gentlemen:

In Nov. 1923 we installed your Automatic Control in our plant and can conscientiously say that we are fully satisfied with our investment. We should say, giving a rough estimate, that we have saved at least 20% of fuel, and that the Powers Automatic Control has a decidedly beneficial effect upon our workers, and that it has helped to increase efficiency to a great extent.

Since the apparatus has been installed we have found it very accurate and dependable, as the temperature is controlled absolute within 3° Fahr. We do not hesitate to state it has had no attention whatever since being installed.

You have permission to use this letter as reference.

Very truly yours,  
TWEEDY SILK MILLS INC.

Per *M. R. P. trial Supt.*

RA/W

TWEEDY SILK MILLS



VELVET TEXTILE CORP., WEST HAVEN, CONN.







## SHOP AND OFFICE TEMPERATURES



OSCAR HEINEMAN CORPORATION  
ARM AND THROWN BIL  
MACHINE PARTS AND ASSEMBLY  
CHICAGO.

January 22nd, 1926.

The Powers Regulator Co.,  
2720 Greenview Ave.,  
Chicago, Ill.

Dear Sirs:-

It was in the year 1921 that we installed Powers Temperature Regulation in our office building. Up to date it has been accurate, maintaining a uniform temperature at very low upkeep cost.

It being an economical fuel saver, I am sure that by this time the installation has paid for itself.

Very truly yours,

*Louis Duckson*  
Chief Engineer.

Photograph above shows the  
CRANE CO. CORWITH PLANT  
CHICAGO, ILL.

Heated by hot water, forced circulation, with Powers Central Station Heat Control. The Unit Heaters in Foundry Buildings are controlled by Powers No. 16 Regulator.



Photographs above show plants of  
OSCAR HEINEMAN CORP.

### B. MUELLER & COMPANY

IMPORTING AND MANUFACTURING CHEMISTS



GENERAL OFFICES & LABORATORIES CALUMET AVE. & 60th ST  
CHICAGO, U.S.A.

January 20th, 1926.

The Powers Regulator Company  
2720 Greenview Avenue  
Chicago, Illinois.

Dear Sirs:

We have been using Powers Regulation in our plant since July, 1915, and feel that the investment has proven profitable.

It is difficult to estimate just what percentage of fuel is saved by means of Powers Regulation, as that apparatus has been used as long as our present building. There is no question but that there has been a big saving, as our windows are never open. In the summer time we have a cooled air system, so that the year around we are saved the annoyance of dirt and dust, and fuel waste through opening windows to relieve excessive heat.

Undoubtedly the Powers Regulation has helped to increase the efficiency of our office help, and we have always found it accurate and dependable.

Yours very truly,

B. MUELLER & COMPANY

*B. Mueller*

123-75

ADDRESS ALL CORRESPONDENCE TO THE COMPANY AND NOT TO INDIVIDUALS



# THE POWERS REGULATOR COMPANY

## ILG ELECTRIC VENTILATING CO.



MANUFACTURERS  
SELF-COOLED MOTOR PROPELLER FANS  
BLOWERS, EXHAUSTERS, AUTOMATIC SHUTTERS  
AIR CONDITIONING APPARATUS, UNIT HEATERS

GENERAL OFFICE AND WORKS  
2850 N. CRAWFORD AVE.

CHICAGO, Jan. 16, 1926.

SALES OFFICES  
ALL PRINCIPAL CITIES  
CABLE ADDRESS  
"ILG CO" CHICAGO  
CODES  
WESTERN UNION  
4 N. C. L. 184895

IN YOUR WORK  
PLEASE REFER TO RAI

The Powers Regulator Co.,  
2720 Greenview Ave.,  
Chicago, Ill.

ALL INFORMATION IS MADE TO THE PUBLIC WITHOUT LIMITS OF PATENTS & IS NOT TO BE USED IN ANY MANNER THAT WOULD BE INJURY TO THE COMPANY OR ITS REPUTATION.

Gentlemen:-

In 1922 we decided to test the Powers No. 16 Regulator on a few of the Ilgair Unit Heaters used to heat our plant. Upon the results of this test we later installed your regulators on the rest of our Heaters.

Before installing these regulators, we observed that while there were always plenty of workmen to turn on the heat if the temperature was too low, there were few, or none, to shut off the heat if the temperature was too high. The men opened the windows instead of shutting off the heat.

By preventing overheating, your regulators unquestionably save fuel, and by eliminating the discomfort caused by temperature being too high, they naturally tend to increase efficiency.

The performance of your regulators has been so satisfactory that we can recommend them with full authority to all users of Ilgair Unit Heaters.

Yours very truly,

ILG ELECTRIC VENTILATING CO.

Per *R. A. ILG*  
R. A. ILG



100000 SQUARE FEET DEVOTED EXCLUSIVELY TO THE MANUFACTURE OF MOTOR DRIVEN PROPELLER FANS AND BLOWERS

RAI WA

Typical application of the Powers No. 16 Regulator to a Unit Heater is shown on pages 25 and 30.

Plant of the  
ILG ELECTRIC VENTILATING  
Co.





# SHOP AND OFFICE TEMPERATURES



The photograph above shows a few of the more than 100 modern printing presses in operation at the Manz Corporation.



First Installation  
October, 1923.

Second Installation  
March, 1926.



ESTABLISHED IN 1887

## MANZ CORPORATION

A COMPLETE PRINTING INDUSTRY  
FROM IDEA TO FINISHED PRODUCT

CHICAGO

February 26, 1926.

The Powers Regulator Co.,  
2720 Greenview Ave.,  
Chicago, Illinois.

Gentlemen:

In reply to yours of the 2nd, regarding the results that we have had since the installation of your Temperature Control throughout our pressrooms, it has given us a great deal of satisfaction to know that the temperature problem has entirely been overcome.

Previous to this installation, we were constantly confronted with the variations of temperature, which made it very difficult in handling the paper stock, such as we do in our line of work.

The Temperature Control we find has had its beneficial effects on the rollers, inks, and paper, and we are very well satisfied with the installation, and have considered it a profitable one.

Yours very truly,

MANZ CORPORATION

*Christen Olsen*  
General Superintendent





## THE POWERS REGULATOR COMPANY



### THE ROCKWOOD MANUFACTURING COMPANY

PAPER PULLEYS & FIBRE FRICTIONS

1811 - 1813 KENDALL AVENUE

INDIANAPOLIS, IND., U.S.A.



WDE:EM

December 10, 1925.

The Powers Regulator Co.  
2620 Greenview Avenue  
Chicago, Illinois

Gentlemen:

We are pleased to be able to advise you of the very satisfactory results we have obtained from the 8 E Thermostats installed in our office building in February, 1924.

As our office heating system is comparatively small compared to the heating system of the entire plant, we do not attempt to estimate the actual saving in fuel which the Powers Control has given. However, the equipment is effective in keeping our offices at a uniform good working temperature under all weather conditions, and this, no doubt, has had its effect on our office organization in properly handling the large amount of details connected with our business.

Prior to installing your Thermostats our office heating system was equipped with control of another make which gave us constant trouble over a period of ten years. Although the representative of the company supplying the other control was very nice in attempting to give us service to keep the parts operating satisfactorily, the installation from our standpoint was certainly an unsatisfactory one.

Your apparatus, we believe, is worth to us its original installation cost each year that it is in operation.

Yours very truly,

The Rockwood Mfg. Company

*W.D. Hamerstadt*  
W.D. Hamerstadt, Gen. Mgr.

*Photograph below  
shows plant of the*

**DIAMOND CHAIN & MFG. CO.**  
AT INDIANAPOLIS

*which is equipped with Powers  
control*





# SHOP AND OFFICE TEMPERATURES



RIVERSIDE AND DAN RIVER COTTON MILLS, DANVILLE, VA.

*This is one the of the largest cotton mills in the United States. The Powers System of Temperature Control is used here.*

*Photograph below  
shows plant of  
IRVING PITT MFG. CO.  
at Kansas City, Mo.*



## IRVING PITT MANUFACTURING CO.

CAPITAL \$3,000,000

LOOSE I-P LEAF

BOOKS AND FORMS

EIGHTH AND LOCUST  
KANSAS CITY, MO.

NEW YORK  
221 BROADWAY  
BROOKLYN  
45 NASSAU STREET  
CHICAGO  
264-270 WEST HAWTHORNE  
CABLE ADDRESS: "IRVINGPIT"

January 26, 1926.

The Powers Regulator Company,  
407 East Thirteenth St.,  
Kansas City, Missouri.

Gentlemen:

We have your inquiry regarding the service of your temperature regulation.

The first installation of this equipment was made, I believe, about fifteen years ago, in one part of the heating line of the old buildings.

Since we have increased the size of our factory by the addition of a six story building, we have installed your regulation equipment in several places throughout the factory, on steam hot-plates, glue-pots, glue storage tanks and heating equipment.

It is our opinion that this equipment is both satisfactory and reliable.

Yours very truly,

IRVING PITT MANUFACTURING COMPANY.

RMVV:EC

*Wm. A. Walkenburgh*



# THE POWERS REGULATOR COMPANY



## CHRYSLER CORPORATION

*Detroit, Michigan, U.S.A.*

January 29th, 1926.

Mr. D. T. Randall,  
Powers Regulator Co.,  
602 Kerr Building,  
Detroit, Mich.

My dear Mr. Randall:

Mr. L. A. Churgay, Works Engineering Department, has asked me to reply to your letter of January 11th.

The Powers Automatic Temperature Regulation we believe has been profitable to us. We cannot say what percentage of fuel we have saved by its use, but feel that it has been beneficial in helping to increase the efficiency of the workers and making the office more pleasant to work in. We have no knowledge that the apparatus has been anything but accurate and dependable. You probably know that our office is located on the second floor of the factory building, the people in the General Offices working in one large open room.

Very truly yours,

*H. B. Hill*  
H. B. Hill  
Office Manager

## DURANT MOTOR COMPANY



*Elizabeth, N. J.*

Feb. 5th, 1926.

The Powers Regulator Company,  
2720 Greenview Ave.,  
Chicago, Ill.

Gentlemen:-

In answer to your inquiry of Feb. 1st, Powers Regulation has been in use in this plant for five years, and there is no question in our minds about the investment being a profitable one.

We have found your equipment accurate and dependable, and consider it an economical fuel saver.

Very truly yours,

DURANT MOTOR COMPANY OF N. J.

CLA/DM

*E. Allen*  
Plant Engineer.

*Photograph below  
shows plant of  
DURANT MOTOR CO.  
at Elizabeth, N. J.*





# SHOP AND OFFICE TEMPERATURES



THE DOHERTY & WADSWORTH CO.  
PLANT AT PATERSON, N. J.

Mr. J. B. Smith, at the Allentown, Pa., plant of the Doherty & Wadsworth Co., shown below, says:

"In the writer's eleven years' connection with this building, the heating problem during the winter was one that gave us a great deal of worry. Since October 1st, 1925, when Powers regulation commenced to perform its work, we have had no trouble and hardly give heating a thought.

"Employees are more comfortable than before your system was installed, and fuel saving amounts to about 12 per cent."



Joseph Wadsworth  
President

Hugh Lweeney  
Treasurer

*The Doherty & Wadsworth Co.*  
*Silk Manufacturers*

Salerooms  
4th Ave. at 21st Street  
New York

Paterson, N. J. March 2, 1926

The Powers Regulator Co.,  
Chicago, Illinois.

Gentlemen:

In answer to your recent letter regarding the Powers System of Temperature Control, which we have in our Paterson mill, would say that we have had this in operation since November, 1919. We consider it a very profitable investment for the reason that our employees can do their work more efficiently because they do not have to work in overheated rooms. Besides this, they enjoy better health for the reason that when they leave our mill to go to their homes, they are not perspiring, or in other words overheated, when they go out into the open where it is often times (during the winter months) many degrees colder.

Regarding the question you ask about what percentage of fuel we save by using the Powers Control, would say that we heat our mill with exhaust steam from our engine, and are unable to answer this question. However, there would certainly be a saving wherever they just have the regular furnaces or boilers for heating purposes only.

We have found your system of control reliable and accurate, and last year we also had you equip our Allentown, Pennsylvania, mill with your control. Our Allentown employees are much pleased with the uniform temperature since it was put in operation.

We can highly recommend, to anyone who is contemplating the installation of Temperature Control, the Powers System.

Very truly yours,

The Doherty & Wadsworth Co.

Per

*W. Ward*





# THE POWERS REGULATOR COMPANY



Plant of the  
HENRY DOHERTY SILK CO.  
CLIFTON, N. J.

*Henry Doherty Silk Company*

*Clifton, New Jersey.*

February 4, 1926.

THE POWERS REGULATOR CO.,  
2720 GREENVIEW AVENUE,  
CHICAGO, ILL.  
TELEPHONE BR 1-1000  
CABLE ADDRESS: "POWERS," CHICAGO, ILL.

The Powers Regulator Co.,  
2720 Greenview Avenue,  
Chicago, Ill.

Gentlemen:-

Your apparatus for controlling temperatures was installed in our plant in Mar. 1919, and while we cannot state definitely the exact percentage of the saving resulting therefrom we are sure it has been very profitable and beneficial, not only from the view point of fuel saved, but in the healthful results to our employees because of the even temperature it has been possible to maintain.

Very truly yours,

HENRY DOHERTY SILK COMPANY,

By *Wm. H. Doherty, Jr.*

**RUDGE & GUENZEL CO.**

**MERCHANTS**

LINCOLN, NEBRASKA

January 22d, 1926.

The Powers Regulator Co.,  
409 East 13th Street,  
Kansas City, Missouri.

Attention--Mr. L. A. Stephenson.

Gentlemen:

In answer to yours of the 21st inst., would say that the fact that you installed your regulating system in our building in 1919 and that we again had your system installed in our new building, which is now under construction, should indicate that we are satisfied with your regulating system, and I think that this is as good a recommendation as we can give you.

Yours very truly,

RUDGE & GUENZEL COMPANY

*L. A. Stephenson*  
President.

CJ7-37

RUDGE & GUENZEL CO.'S STORE







## SHOP AND OFFICE TEMPERATURES



Plant of  
THE CRANE & BREED MFG. CO.  
CINCINNATI, OHIO.

*W. D. B.*  
C. J. Regent, 11th St.  
The Crane & Breed Manufacturing Co.  
Undertakers Supplies  
Everything from a Towel to a Funeral Car  
Cincinnati, Ohio  
Jan. 11th, 1926.

Published by the  
U.S. GOVERNMENT PRINTING OFFICE  
WASHINGTON, D.C.

Powers Regulator Co.,  
Chicago, Ill.

Gentlemen:-

We have in various parts of our building your apparatus installed for a number of years past.

We have found it a profitable investment and an apparatus which is accurate and dependable.

We cannot express with exactitude the percentage of fuel needed, inasmuch as we are not equipped with all the modern registering apparatus.

We however will state that we would not be without your equipment.

Cordially,

THE CRANE & BREED MFG. CO.

*Howard Breed* Pres.

**GOLD & CO.**

LINCOLN, NEBRASKA

January 23, 1926.

The Powers Regulator Co.,  
409 East 13th Street,  
Kansas City, Missouri.

Gentlemen:

We are just finishing our second winter with Powers Regulation, and we want to compliment you on your product. We have never had a moment's trouble with the system, and we are certain that it has saved us a great many dollars in steam consumption.

We can unhesitatingly recommend your product as well as your firm to anyone who is contemplating the erection of a new building.

Yours very truly

GOLD & COMPANY

*Nathan Gold*

NJG:RB

GOLD & CO. DEPARTMENT STORE  
LINCOLN, NEBRASKA







## THE POWERS REGULATOR COMPANY



### THE WILLYS - OVERLAND COMPANY

FINE MOTOR CARS

TOLEDO, OHIO

January 14, 1926.

The Powers Regulator Co.,  
602 Kerr Building,  
Detroit, Mich.

Gentlemen:-

We installed the Powers System of Automatic Temperature Control in our Administration Building in 1916. This is a seven story building, 60 x 375, housing five hundred employees.

Your control is accurate and dependable and to the uniform temperature may be attributed better health and greater efficiency.

We are certain that the installation has been profitable also from the standpoint of fuel saving.

Very truly yours,

*[Signature]*  
First Vice-President.

### POWERS REGULATION

*applied here*

*to*

### FORCED HOT WATER SYSTEM

*of Heating*

WILLYS-OVERLAND  
ADMINISTRATION BUILDING  
TOLEDO, OHIO

*Architects*

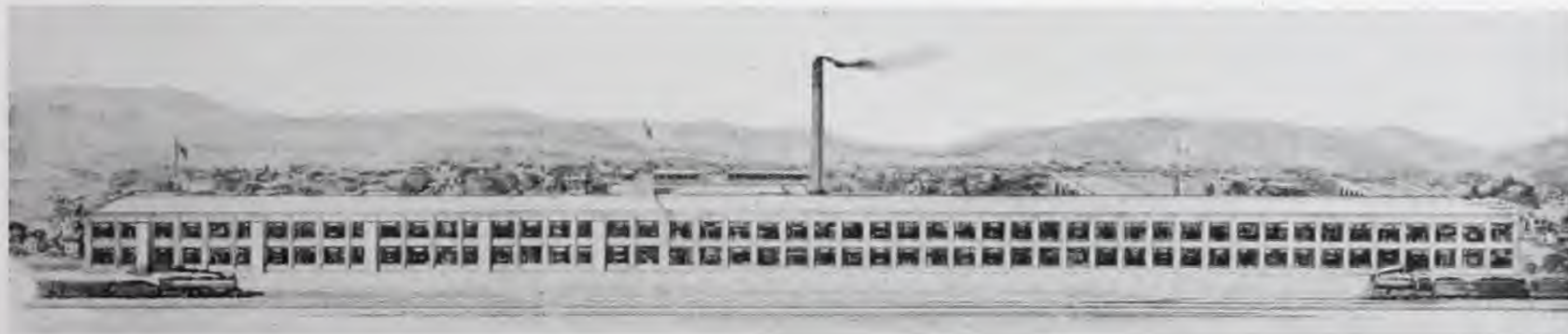
*Mills, Rhines, Bellman & Nordhoff*

The installation in this building was made in 1916, and includes 200 thermostats controlling 500 radiators. A forced hot water system is used. The perfect results obtained under the Powers System of Control are attested to in the letter reproduced.

The Powers System with its graduated valve control is particularly adapted to hot water circulation.



HUNTINGDON SPECIALTY CO., HUNTINGDON, PA., EQUIPPED WITH POWERS CONTROL







## SHOP AND OFFICE TEMPERATURES



PROCTOR & SCHWARTZ, INC.  
PHILADELPHIA, PA.  
ENGINEERS: DAY & ZIMMERMAN, INC.

Proctor & Schwartz, Inc., is one of America's largest manufacturers of textile machinery and industrial drying equipment. Back in 1916 this firm installed a system of Powers temperature regulation in the first unit of the factory and office building shown above. Since that time the following repeat orders were received to install Powers regulation:

October, 1919, extensions made to factory and office additions.

May, 1920, extension made to second factory addition.

September, 1920, extension made to third factory addition.

September, 1921, extension made to office addition.



PROCTOR & SCHWARTZ, INC.  
SEVENTH STREET AND TABOR ROAD  
PHILADELPHIA



March 19, 1926.

Day & Zimmerman, Inc.,  
Philadelphia, Pa.

Gentlemen:

The Powers System of Automatic Temperature Control in our plant has more than paid for itself in economizing the use of steam. It has made our shop more comfortable for the men, and were we to make additions to the plant we would also make additions to the regulating equipment.

Before this equipment was installed it frequently happened that the weather would become warm and our men would neglect to cut off the steam, so that steam was wasted and the shop was made uncomfortable for the employees. With the Powers regulation this is automatically taken care of.

Yours very truly,

*Walter M. Schwartz*  
President,  
PROCTOR & SCHWARTZ, INC.

WMS L121

### *The Best Costs Less in the End*

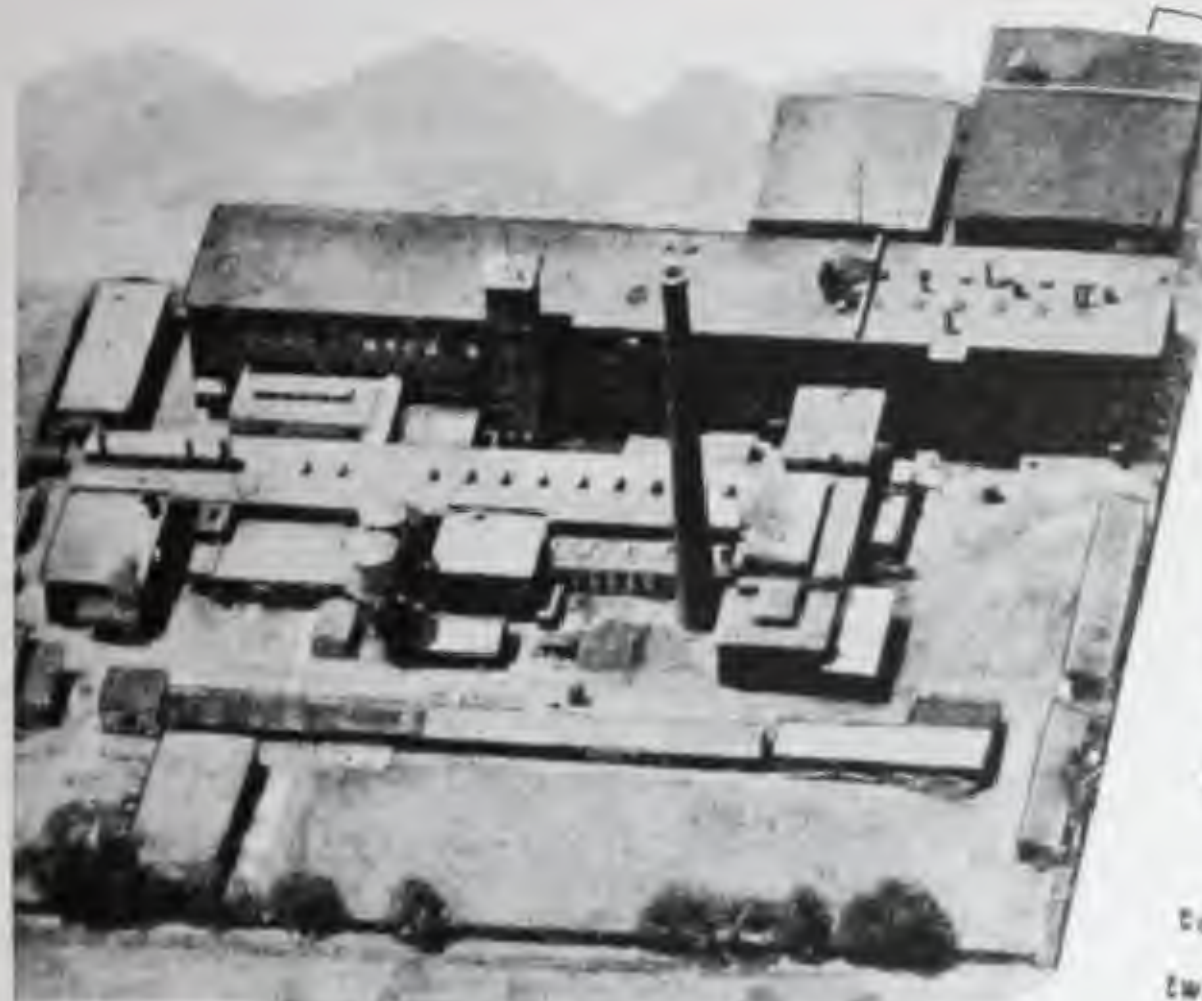
When only 1° F. of overheat causes a fuel loss of 3 to 5 per cent, and a 2 per cent reduction in the output of workers, is it not clear that the accurate control secured with Powers Regulation will quickly pay for the difference between its higher first-cost and that of cheaper systems?

An example of what we mean by "accurate control" is illustrated on the opposite page. We shall be glad to submit evidence showing that Powers Regulation often gives fifteen to twenty-five years of accurate and dependable control with practically no expense for adjustments or repairs.



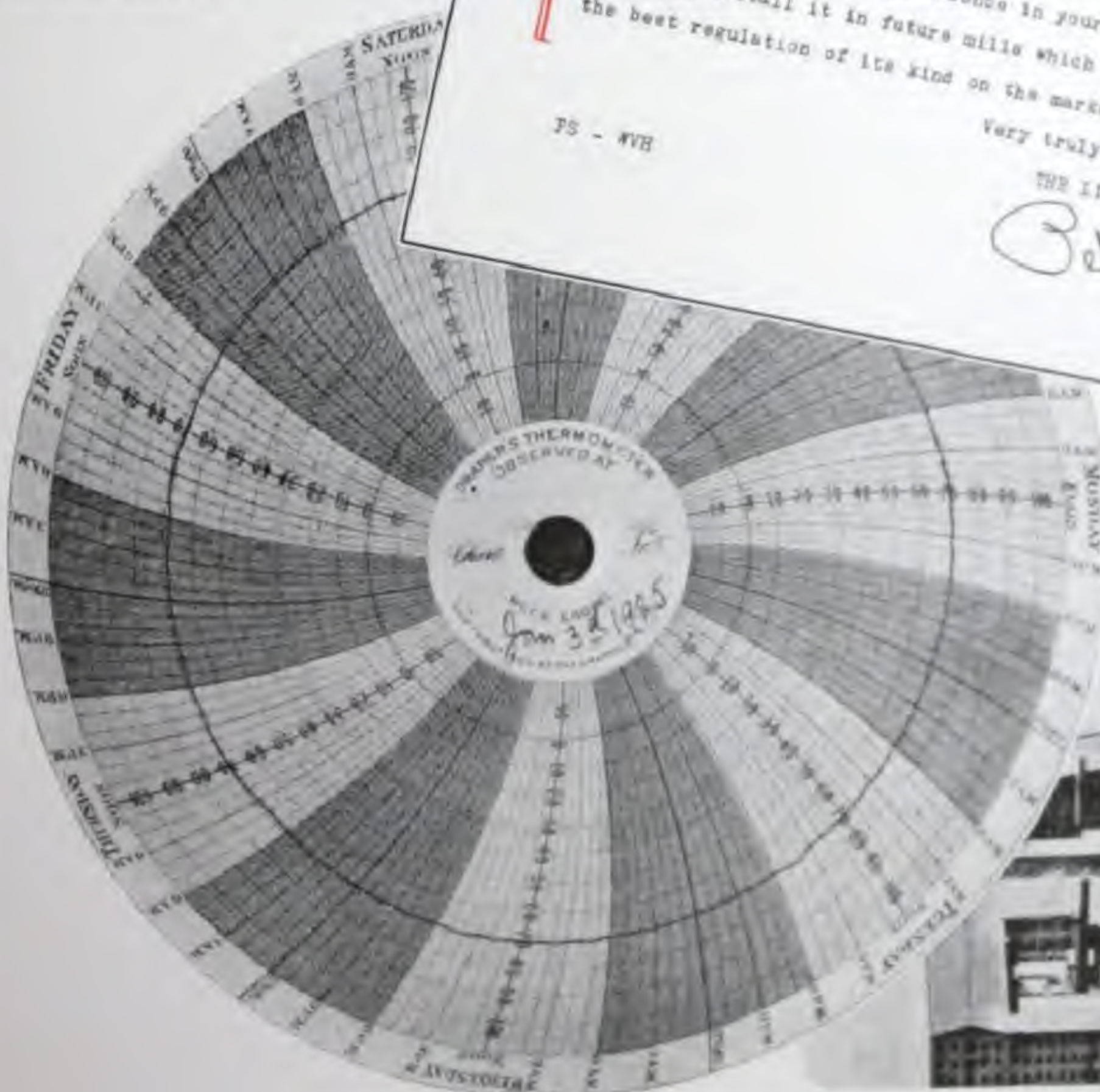


# THE POWERS REGULATOR COMPANY



*Jute mill of the  
LINEN THREAD CO.  
at Kearny, N. J.*

CHART below shows very accurate control obtained with Powers regulation at the mill above.



CABLE ADDRESS: "WREATHING PATENT"



*The Linen Thread Company*  
Mechanical Department

GRAND ST. Paterson, N. J.

Powers Regulator Co.,  
2720 Greenview Ave.,  
Chicago, Ill.

Feb. 12, 1926.

Gentlemen:-

Some two years ago we investigated the different systems of heat control with a view to installing such systems in two of our mills. Would say that since that time installations have been made in the Finishing Department and Office at our Grand St. mill and in the entire new Jute Mill at Kearny, N. J. We have kept accurate temperature records of heat in these rooms at various times and would say that the results accomplished by your control are certainly remarkable, particularly in our Jute Mill at Kearny where we used to control the temperature within very close limits on account of certain manufacturing processes. We do not believe we could have run this mill at all satisfactorily unless we had a control such as yours. We have every confidence in your regulation and would certainly install it in future mills which we build, it being the best regulation of its kind on the market.

PS - WVB

Very truly yours,

THE LINEN THREAD COMPANY

*Peter Smith*

*Grand Street mill of the  
LINEN THREAD CO.  
at Paterson, N. J.*







## *“How Much Will It Cost Us to Install Automatic Temperature Control?”*

In this book we have presented an abundance of evidence to show the big dividends paid by an investment in Powers Temperature Control. Some users have stated that our control has paid for itself in three to four years, while others state that it paid for itself the first year it was installed.

For these reasons, it will pay you to get an answer to the question at the top of this page.

Many installations of Powers Control give ACCURATE and DEPENDABLE regulation for fifteen to twenty-five years with practically no expense for repairs.

There are few, if any, other kinds of equipment which will yield as high a return on the money invested.

Each year a heating system operates without automatic temperature control, money is lost which could have been used to increase salaries or dividend payments to stockholders.

Upon request we shall be glad to have one of our engineers make a careful study of the conditions in any building you wish to control. We will then submit an estimate covering the cost of the type of regulation which will give you the best results at the lowest cost. Our estimate places the inquirer under no obligation.

## *“Can Powers Regulation Be Installed in Old Buildings?”*

*Yes. About one-half of our installations in the industrial field are made in buildings that were erected without a system of temperature control. Regardless of the type of building construction, we can install our small air piping with very little difficulty or disturbance to the occupants; and only slight interference with the heating system is involved in placing our diaphragm control valves.*



# THE POWERS REGULATOR COMPANY

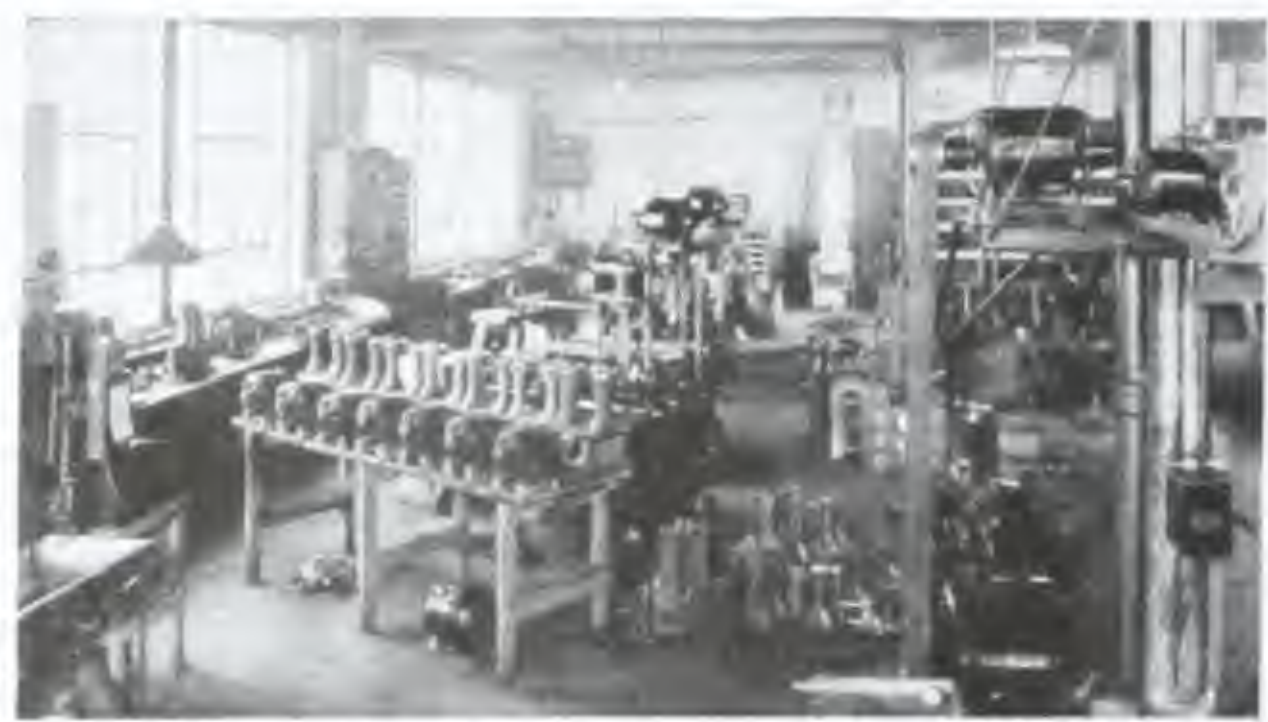
## *Where Powers Products Are Manufactured*



THE FACTORY



*Water Control Department*



*Where the Air Compressors are Made*



*Thermostat Assembly Department*



*A Corner in the Engineering Department*

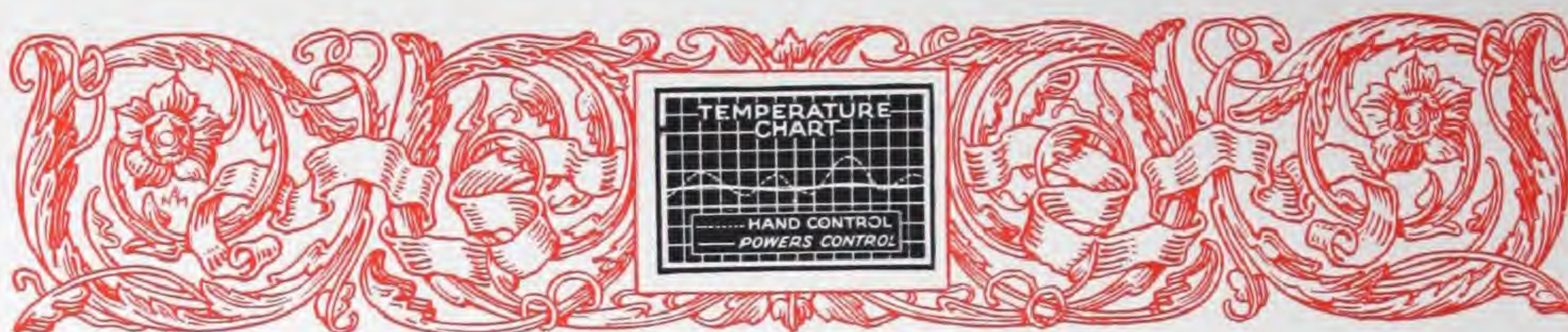


*Self-Contained Regulator Department*



*Screw Machine Department*





## *Rigid Service Standards*

The business of the Powers organization is not only to furnish Automatic Temperature Control but to insure that users get the service from it that they have a right to expect. The service rendered by the company is of great importance to our clients, covering, as it does, not only the proper installation of our apparatus but its continued successful operation. Powers service extends, therefore, throughout the life of the apparatus, which must necessarily be the life of the building in which it is used.

While the experience as expressed by our clients over periods of many years gives eloquent testimony to the durability of our work, it cannot be assumed that the user will never require our help. Changes may be made in heating systems, alterations in build-

ings, additions, etc., so there is necessity that an organization like ours shall be available when needed.

Powers Systems are not ready-made; the principles and the apparatus are standard, but each job receives special treatment and study. With our large corps of engineers located in the principal cities, we are able to fit each system to the particular work that it has to do, thereby assuring the buyer the worth of his money.

For this reason consultation with our engineers is a fundamental part of Powers service that must precede any contract that we make.

This consultation service is rendered gladly, in your interest and our own. Please feel free to avail yourself of it.



## THE POWERS REGULATOR COMPANY

*35 years of specialization in temperature control*

General Eastern Office  
126 E. 44th St., New York City

General Offices and Factory  
2720 Greenview Ave., Chicago, Ill.

Canadian Powers Regulator Co., Ltd.  
106 Lombard St., Toronto, Ont.

### BRANCH OFFICES

Atlanta  
Baltimore  
Boston  
Buffalo  
Butte, Mont.

Charlotte, N. C.  
Chattanooga  
Chicago  
Cincinnati  
Cleveland

Dallas  
Denver  
Des Moines  
Detroit  
El Paso

Houston  
Indianapolis  
Kansas City  
Los Angeles  
Milwaukee

Minneapolis  
Nashville  
New Orleans  
New York  
Philadelphia

Pittsburgh  
Rochester  
St. Louis  
San Francisco  
Seattle

CANADIAN OFFICES  
Calgary  
Halifax  
Montreal  
Toronto  
Vancouver  
Winnipeg





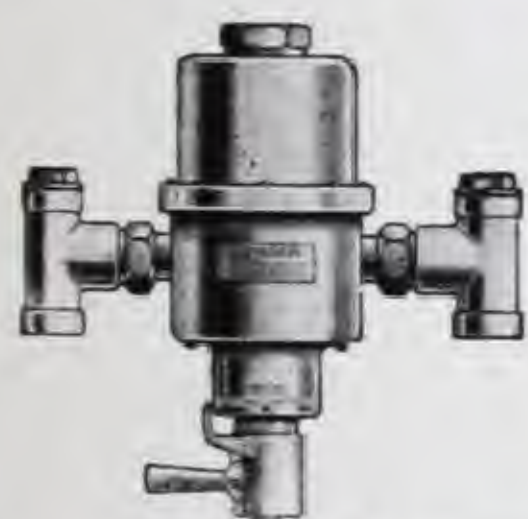
**No. 15 Regulator**

A self-operating regulator for controlling atmospheric temperatures. Adapted to drying rooms, lumber kilns, varnish driers, enameling ovens and similar uses.



**Style D Mixer**

This device mixes steam and cold water and delivers a mixture at any temperature desired. For use on shower baths, wash sinks, and industrial processes. Absolutely scald-proof. Capacity 6 gals. per min.

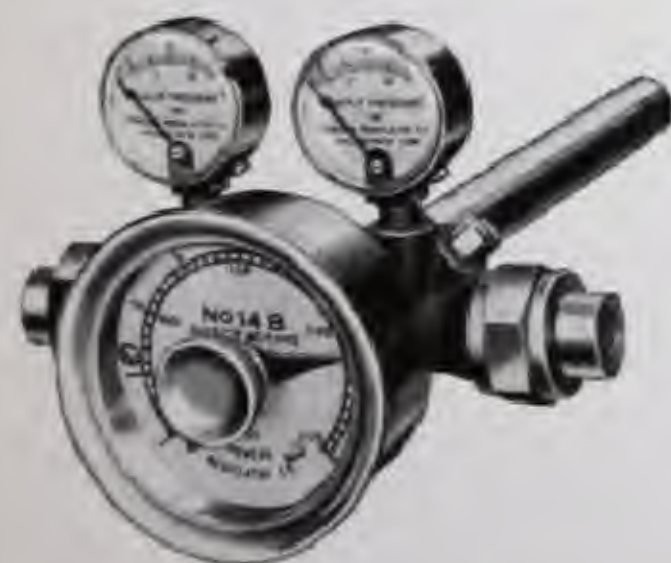
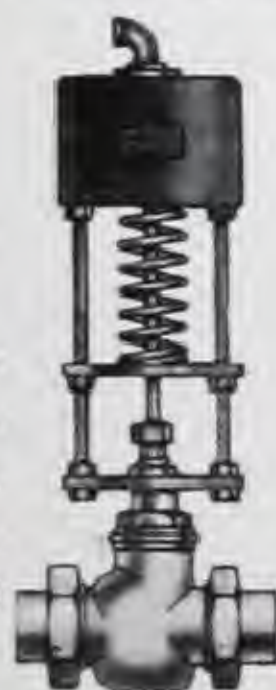


**Thermostatic Water Controller**

Mixes hot and cold water and delivers warm water at a predetermined temperature. For group shower baths and industrial processes. Absolutely scald-proof. Capacities from 15 to 100 gals per min.

**Pressure Reducing Valve**

For steam, air or water. Is simple, accurate and durable. Used on sterilizers, vulcanizers, cooking retorts, etc.



**No. 14-B Regulator**

Compressed air operated, rigid stem regulator, with adjusting mechanism located at the point where temperature is to be controlled. Is used with diaphragm valves and motors in the automatic control of heating and cooling mediums where absolute accuracy and reliability are required. Controls temperature of air, gas or liquids.

# Temperature Control for Industrial Processes

Shown here are only a few of the more than fifty different types of regulators we make to control temperature of Liquids, Gases and Air in Industrial Processes.

We can submit an abundance of evidence to show how these regulators have added thousands of dollars to the profits of firms using them.

Our engineering department will be glad to study any of your problems of temperature control and recommend the type of regulator which will give you best results at lowest cost.

## Here Are a Few of the Many Processes Controlled by Powers Regulators

### Automobile Industry

Enameling Ovens  
Enamel Japan Tanks  
Paint Drying Rooms  
Rubbing Decks  
Car Washing  
Lumber Dry Kilns  
Quench Tanks  
Metal Washing Machines  
Sterilizing Cutting Oils  
Rust Proofing Tanks  
Heat Treating  
Water Circulated Around  
Babbitt Machines  
Testing Motor Thermostats  
Nickel Plating  
Fuel Oil Preheaters  
Hot Water Tank Heaters

### Bakeries

Temperature and Humidity  
Control of Rooms  
Dough Mixers  
Baking Ovens  
Wrapper and Package Waxing  
Tanks  
Refrigerating Systems

### Candy

Temperature and Humidity  
Control of Rooms  
Cooking Kettles and Vats  
Beaters  
Tanks  
Coating, Dipping and  
Tempering Machines  
Cooling and Bonbon Tables  
Popcorn Popping Machines  
Peanut Roasters  
Package and Wrapper Waxing  
Tanks  
Refrigerating Systems

### Industrial Power Plants

Feed Water Heaters  
Hot Water Heaters  
Barometric Condensers  
Deaerators  
Jet Condensers  
Water Back  
Steam and Water Mixers for  
Shower Baths

### Meat Packing Plants

Cooking Vats and Retorts  
Washing and Sterilizing  
Water Tanks  
Open Tank Exhaust Heaters  
Thawing Rooms  
Refrigerating Systems  
Steaming Cabinets  
Sausage Drying  
Smoke Houses

### Motion Picture Films

Emulsion Baths  
Wash Water for Films  
Drying  
Perforating Rooms

### Paper Mills

Drying  
Coating  
Glue and Wax Coating Tanks

### Petroleum Refineries

Gasoline Stills  
Condenser Boxes  
Fractionating Towers  
Deflegmating  
After Coolers  
Oil Treating Pits  
Oil Cooling Vats  
Water Cooling Systems

### Piano Manufacture

Lumber Dry Kilns  
Glue Heaters  
Varnish Drying Rooms  
Ivory Curing Vats  
Ivory Dryers  
Ivory Rooms  
Cyanide and Plating Baths  
for Pedals

### Rubber and Rubber Products

Drying  
Calendering  
Vulcanizing Retorts  
Refrigeration  
Oil Vats  
Golf Ball Paint Dry Rooms  
Rubberized Cloth Drying and  
Curing

### Steel Products

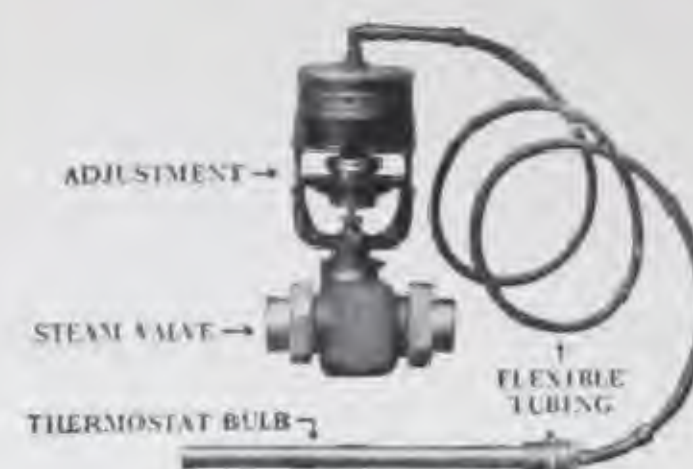
Quench Oil Tanks  
Quench Oil Heaters  
Quench Oil Coolers  
Water Quench Vats  
Quench Water Storage Tank  
Heaters  
Galvanizing  
Water Cooled Furnace Doors  
Barometric Condensers  
Fuel Oil Storage Tanks  
Fuel Oil Heaters  
Tempering Drawing Furnaces  
Metal Washing Machines  
Sterilizing Cutting Oils

### Textile Mills

Dryers  
Dye Machines and Kettles  
Conditioning  
Size Storage Kettles  
Size Boxes  
Slasher Size Level Control  
Slasher Drying Cylinders  
Drying Cans  
Weaving Rooms  
Bleaching Machines and  
Kiers  
Tentering  
Mercerizing Machines  
Calendering  
Humidifier Tanks  
Wool Scouring Bowls  
Carbonizing  
Spinning Rooms  
Washing Machines  
Silk Finishing Machines  
Felt Dryers

### Woodworking Industry

Log Steaming Vats and  
Boxes  
Lumber Dry Kilns  
Glue Kettles  
Varnish, Paint and Veneer  
Drying Rooms



**No. 11 Regulator**

A self-operating regulator for controlling temperature of liquids in tanks, vats, feed water heaters, pasteurizers, acid baths, etc. Unequalled for its durability, simplicity and accuracy.



**Powers Shower Mixer**

Protects the bather from unexpected "shots" of cold or scalding hot water so common in the old type of showers. For clubs, hotels and residences.



**High Pressure Steam Trap**

Capacity of our  $\frac{1}{2}$ " trap is as large as many  $\frac{3}{4}$ " and 1" traps. Is thermostatic. Long life GUARANTEED. Very simple, rugged, and small in size. For steam pressures up to 125 lbs. No superheat.

**No. 16 Regulator**

A self-contained regulator for controlling steam or gas heated ham-cooking vats and similar uses. Is exceedingly sensitive. Gives results far more accurate than are usually secured with self-operating regulators.



**No. 21 Regulator**

Compressed air operated. Designed for conditions where adjusting mechanism must be located at some distance from the point where temperature is to be controlled. Used with diaphragm valves and motors for controlling heating and cooling mediums.











